Cardamom

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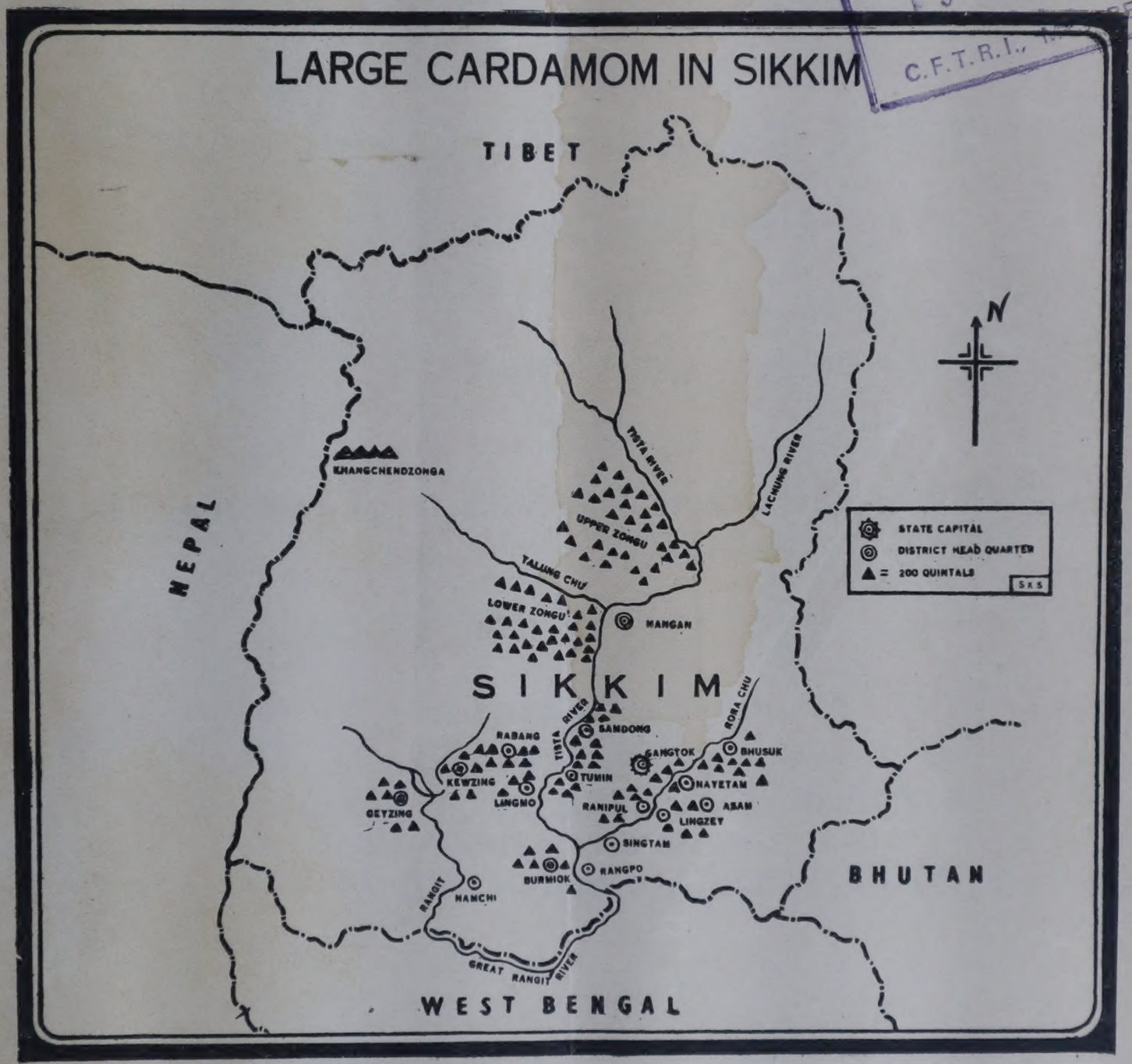

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CARDAMOM

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ON THE COVER

Map showing the Large Cardamom growing pockets in Sikkim.

Editorial

AMMOMUM CARDAMOM

While *Elettaria cardamom* (Small cardamom) produced in Kerala, Karnataka and Tamilnadu is mainly an export oriented commodity, *Ammomum cardamom* (Large cardamom) produced in Sikkim and Darjeeling District of West Bengal is mainly consumed inside the country. The production of large cardamom in India is roughly estimated to be of the order of 2500 – 3000 M.T. per annum. Of this about 100 M.T. are only exported to neighbouring countries like Pakistan, Burma, Malaysia and Singapore. The price of Large cardamom is about Rs. 15/- per kg. as compared to Rs 175/- per kg. for Small cardamom.

Back in the 19th Century itself explorers of the standing like Sir J. A. Hooker had recognised *Ammomum cardamom* as a very profitable crop in Sikkim. However, it remains a sad story that such a crop of considerable economic importance in the area failed to attract the attention of the planners in Agriculture and plantations. If we take a plunge into the present desolate state of this industry, we can easily find that the industry is still in its infancy since no appreciable work has been done to improve the quality and quantity of this important commercial crop. There has not been any concerted effort to understand the various problems faced by the crop and thereby improve its production, processing and marketing. It deserves to be given priority for detarted investigation on development of suitable varieties, package of practices, processing techniques, marketing etc.

After the annexure of Sikkim into the Indian Union, rays of hope have begun to emerge regarding the development of the State as a whole. It was in this context the Government of Sikkim have expressed the view that the problems of Large cardamom in Sikkim could be solved effectively only if an experienced body like the Cardamom Board could take up the developmental activities with regard to its cultivation, processing, marketing etc. The Government of Sikkim had also held detailed discussions with the Government of India and Cardamom Board on the subject. The Cardamom Board has agreed to take up the task of developing Ammomum cardamom industry also.

And thus the Government of India have now decided in principle to bring Large cardamom under the purview of the Cardamom Act to be dealt by the Cardamom Board with reference to all aspects of development, marketing, exports etc. A team of experts from Cardamom Board visited the Large cardamom growing areas in the North Eastern States and made an on-the-spot study of the various aspects of the Large cardamom plantation industry in those areas and submitted its report to the Government of India. They have put forward certain suggestions regarding the lines of approach to be adopted in the field of research, development, marketing etc. for the development of Ammomum cardamom industry. It is expected that the notification bringing Large cardamom under the purview of the Cardamom Board will be issued shortly.

Let us hope that it will take the Ammomum cardamom growers, especially the small holders, who constitute the majority of the Ammomum cardamom community in the Sub-Himalayan region to new horizons of economic prosperity. □

LARGE CARDAMOM

G. B. SINGH

So far very little has been documented on the various aspects of large cardamom. In this article Shri G. B. Singh, Joint Director of the newly opened Regional Centre of the ICAR Complex at Gangtok has made an effort to bring together existing information on plant characters, cultivation operations etc. of large cardamom. Shri Singh has conducted surveys on the Sikkim cardamom industry and interviews with connected interests and come to certain conclusions. He has also suggested certain important lines of work requiring immediate research and development attention. —*EDITOR*

(1) IMPORTANCE AND PLANT DESCRIPTION

Sikkim has the largest area and maximum production of large cardamom (*Ammomum subulatum Roxburgh*) in the country followed by sub-Himalayan regions of West Bengal and Assam. Adjoining Himalayan kingdoms of Nepal and Bhutan and some of the Eastern countries viz. Thailand, Indonesia and Laos are also known to grow and trade in this commodity. Since large cardamom is planted under shady trees on steep slopes, receiving very little sunlight, where no other crop can be profitably grown, it

A healthy large cardamom plantation

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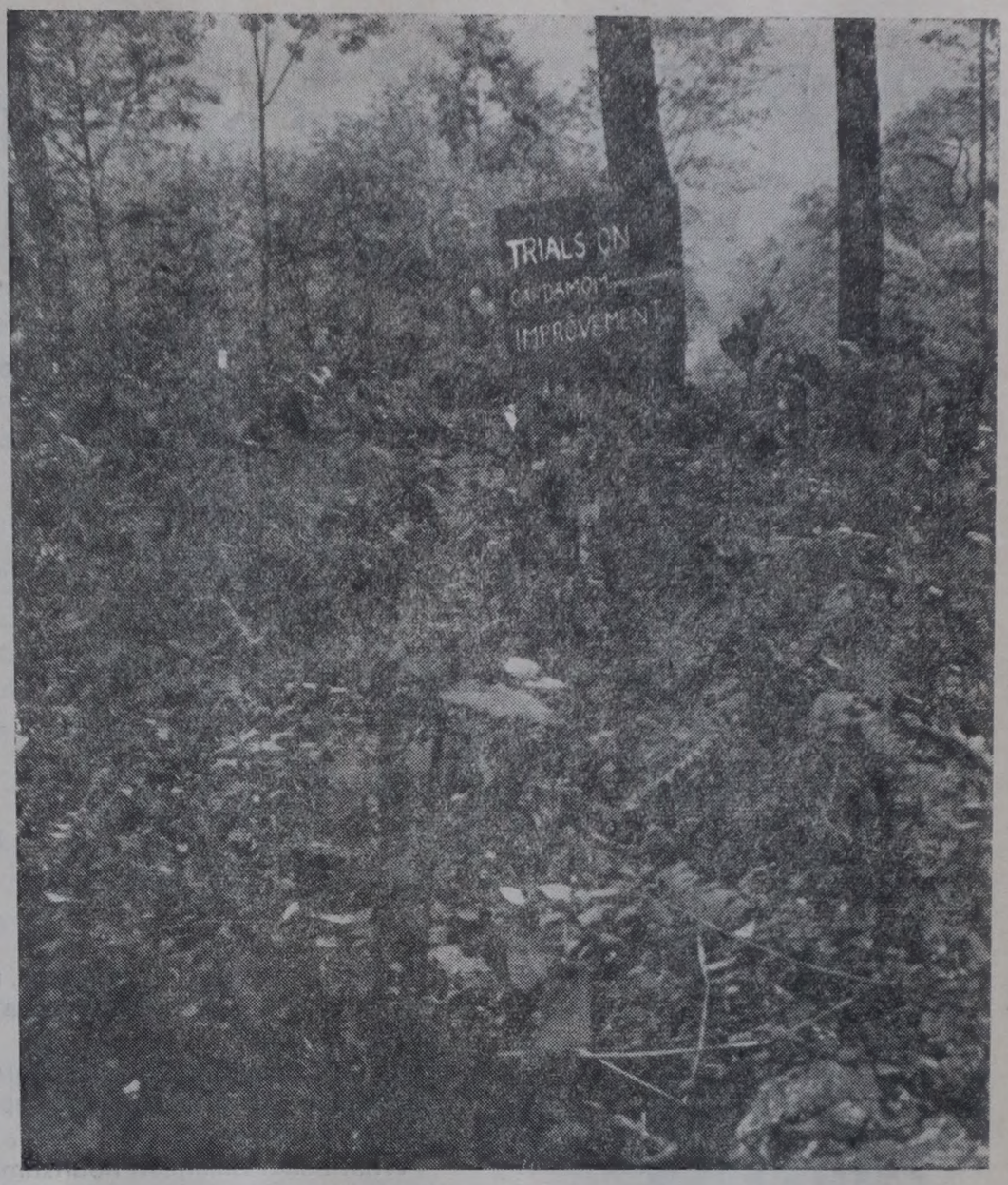
hardly competes with any other commercial crop in the region. Although exact statistics of area and production are not available according to an estimate (Sikkim Herald 1973), the annual production of large cardamom in India Nepal and Bhutan are 2,600, 200 and 100 tonnes, respectively. Sikkim alone produces 1800 tonnes, contributing to about 70 per cent of the total Indian production of large cardamom which is transported to Delhi, Calcutta, Kanpur, Amritsar and to some other places for further distribution in the country. Only a small quantity of the produce is exported to U. K., Afghanistan Dubai, Finland, West Germany and to other Middle East countries. In the year 1973 -74 large cardamom worth Rs 14 lakhs was exported forming only 4.5 per cent of the total value of the production in the country (Pruthi 1977). Such a low export figure inspite of demand from Middle East and other countries, itself speaks of the deplorable state of this very important cash crop of North Eastern sub-Himalayas. However, if already existing interest of Pakistan, Afganistan and middle East countries in this commodity is appreciated and sincere effort is made to improve the cultivation and production of this much neglected large cardamom by organising a good setup of research and development, we will not only gain in earning substantial foreign exchange, but would also improve the economic condition of people of North Eastern sub-Himalayan region. For launching any Research and Development effort, it is necessary to know the plant, its growing conditions and problems of cultivation.



Preliminary efforts on scientific management

Since very little has been documented on these aspects of large cardamom, an effort is made in this article to bring together the scattered existing information on the plant chracters, composition, cultivation practices, problems and also to highlight some important lines of work requiring immediate research and development attentions.

The Plant, The Fruit

Large cardamom belongs to the family Zingiberaceae of Monocotyledons. The plant is a tall herbaceous perennial having branched subterranean rhizomes which gives rise to several erect leafy shoots and panicles. The number of leafy shoots may go upto ten in a healthy clump. The leafy stem has oblong lanceolate acuminate green leaves, glabrous on both surfaces. During or after third year of transplanting of the rhizomes, flowers and fruits are produced. Flowers (inflorescence) which arise at the base of the leafy shoot are zygomorphic, hermaphrodite and are cross-pollinated

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by the bees. The fruit is a globose trilocular capsule (approx 2.5 cm) of dark red brown colour containing several aromatic seeds in each cell, held together by a viscous sugary pulp. Fruit on an average comprises of 70 per cent seeds and 30 per cent skin. The seeds possess properties similar to those of small cardamom (Elettaria cardamomum). An analysis of large cardamom seeds is given in Table–1.

Specific gravity at 29°C	:	0.9142
Refractive Index at 29°C	:	1.4600
Optical Rotation in Chloroform	:	18°3"
Acid value	:	2.90 per cent
Saponification value	:	14.53
Saponification value after acetylation	:	40.20
Cineole	:	64.94 per cent
Terpinene	:	10.7 per cent
Sabinine	:	6.60 per cent
Terpinyl acetate	:	5.10 per cent
Bisabolene	:	3.60 por cent
Polymerized oil	:	3.60 per cent
Terpeniol	:	7.15 per cent

Table–1: Chemical analysis* of large cardamom seeds and corresponding values of ingredients in small cardamom:

Composition	Large cardamom (Ammomum subulatum) Average per cent Values	Small cardamom (Elettaria cardamomum) Average per cent Values
Moisture	8.49	8.30
Volatile oil	2.80	8.30
Protein	6.00	10 30
Crude fibre	22.00	9.20
Starch	43.21	45.40
Total ether extract	5.30	Not given
Alcohol extract	7.02	Not given
Total ash	4.01	5.00

*SOURCE: "Spices and Condiments" by J. S. Pruthi (1977)

According to other authors total ash in the whole large cardamom and seeds varied from 5.49 to 6.56 and 3.45 to 4.57 per cent, acid insoluble ash 0.27 to 0.72 and 0.31 to 1.3 per cent and volatile oil 0.5 to 1.50 and 0 9 to 2.0 per cent respectively. Essential oil is obtained on steam distillation of the crushed seeds which yield 2.5 per cent of mobile liquid having a characteristic smell of Cineole with the following physical and chemical constants:

Composition of large cardamom seeds indicates that they can be put to variety of industrial and other uses. As described by Pruthi (1977) the seeds of large cardamom are widely used as a spice or condiment and as flavouring agent in bakery products etc. In medicine they are frogrant adjuncts to other stimulants, bitters and purgatives. The seeds have a sharp and good taste and are tonic to heart and liver. They are astrigent to the bowels, a hypnotic, and appetiser and cause belching. The outside covering is good for headache and for the teeth and heals stomatitis. The decoction of seeds is used as a gargle in affections of teeth and gums. In combination with the seeds of melons, it is used as a diuretic in cases of gravel of the kidneys. In certain disorders of the digestive system marked by scanty and viscid secretion from the intestine, it promotes elimination of bile and is useful in congestion of the liver. The seeds are used in gonorrhoea and as aphrodisiac. They have also been found useful in neurolgia in large doses, in conjunction with quinine. The oil extracted from the seeds is applied to eyelids to allay inflamation. It is aromatic, stimulant and stomachic.

(ii) EXISTING CULTIVATION PRACTICES

As early as in the year 1894 the "Gazetteer of Sikkim" reported that one cardamom, the *Bara Elaichi (Ammomum Subulatum)*, is cultivated extensively under the chequered shade of trees and shrubs, at low elevations, in places capable of being irrigated at the

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proper seasons. Presently the cultivation of large cardamom extends from an altitude of 500 to 1800 meter on slopes in sub-mountain tracts along the side of streams or in such slopy areas which do not get much direct sunlight and remain humid and cool throughout the year. In Sikkim, although the crop is grown in all the four districts (North, East, South, and West), almost 75 per cent of the total production in the State comes from North and East districts. The following information on cultivation practices are mostly based on the personal interviews conducted by the author with the cardamom growers of different agroclimatic regions in all the four districts of Sikkim.

A plantation on the verge of extension

Climatic Requirements

for satisfactory growth of cardamom plantations, moderate shade, high humidity and cool surroundings are very essential. During dry periods of November to February the plants exposed to direct sunlight, are severely scorched. In order to avoid such a situation the plantation is usually done on such slopes which do not get much direct sunlight (Eastern & Northern slopes) For further protections, shade giving trees are planted in cardamom fields at appropriate spacings. Besides obstructing sunrays, the inter-planted trees create a microclimate under them which keeps the surroundings humid and cool. Although cardamom is preferably grown near water source, it does not do well in stagnant water. Panicles bearing fruits, which are almost on the soil surface level, rot after getting submerged. Low temper- atures nearing freezing adversely affect the growth and development of the plant This might be the main reason for restricting cardamom cultivation only to lower altitudes (500 to 1800 Meter).

Soil requirements

The crop grows best on well drained rich forest soils having plenty of humus and leaf mould Since the plant has lot of surface feeding roots, for their congenial growth the soil should essentially be well drained. Cardamom plantations established on rich and well drained soils, besides giving higher yields, maintain their productivity for a considerably longer period some times more than 20 years.

Prevalent varieties

Ramshai, Sawaney and Golshai are the three well recognised varieties of large cardamom in Sikkim. Some other known varieties viz. Chibe and Ramnag are said to be only derivatives of the above mentioned well recognised varieties. Some variety is called by different names in different localities, as variation in growing condition may cause change in plant colour whereas harvesting at different stages of fruit development may change fruit skin colour. The following are the description of major varieties grown in Sikkim.

RAMSHAI is a Bhutia word which means yellow colour (*Ram*–colour, *shai / sey*- yellow). Plants of this variety are tall (approx 2.5 meters) having many shoots (10–15) with thin and long leaves. The fruits are smallest in size and are of inferior quality. The variety is mostly grown on higher altitudes (around 1500 meters and above) as on lower altitudes the plants are severely affected by *Furkee* virus disease.

SAWANEY is a Nepali word which means that the variety is harvested in the month of *Sawan* i. e. August. Plants of this variety are also tall (approx. 2 5 meters) but the leaves are wider and shorter compared to that of Remshai variety. The fruits are

bold in size and brown in colour. This variety is very popular in lower altitudes (below 1500 meters) as it is comparatively less susceptible to *Furkee* virus disease.

GOLSHAI is a derivative of the words *gol*- round (Hindi) and *Shai / sey*-yellow (Bhutia)indicating the round shape and yellow colour of the fruits. The plants of this variety are short with fewer shoots (5-6) and leaves are also comparatively very short and broad. Fruits are big and bold and are sold on premium price because of good appearance.

Preparation of land

If virgin forest areas are selected for the plantation, they are cleared of all under growth and trees not suitable for the relatively heavy shade needed by cardamom. Where tree growth is sparse and shade insufficient or unsatisfactory, quick growing trees are planted for temporary shade and other trees with a tall and spreading habit for permanent shade. The tree selected for providing permanent shade in cardamom plantations should have following characteristics:

1. Tall and fast growing habit so that within three years of planting the tree attains sufficent growth to provide shade for already flowering cardamom plants.

2. Tendency to develop ample canopy so that sufficient shade is provided.

3. The tree should maintain maximum canopy during the dry period of November to February so that protection from direct sunrays is provided to cardamom plants when they are most prone to scorching and withering.

4. Leaves of the tree should be of such composition that they get decomposed quickly after falling on the ground. Quick decomposition of leaves increases the organic matter of the soil which is very much needed for high productivity of the plants.

"Utis"(*Anlus nepalensis*)which is largely grown in cardamom fields normally meets all these requirements. Some other trees viz. *Saur* (*Betula spp.*), Pipli (*Bucklandia populnea*), *Panisaj* (*Terminalia myriocarpa*) and *Chilaune* (*Schima wallichii*) are also grown in cardamom plantations

Planting

Cardamom generally is propagated by planting a section of the rhizome, called 'bulb', from an established clump. Propagation can also be done by sowing seeds in the nursery and transplanting the seedlings. In vegetative propagation, bulbs along with a portion of shoot are planted at 150 cm. x 150 cm. distance for *Ramshai* and *Sawaney* varieties and at 90 cm.x90 cm. distance for *Golshai* variety by just opening a hole in the soil. Generally, one shoot along with bulb is planted at one point. Planting is done in the months of June, July when there is sufficient soil moisture, atmospheric humidity and optimum temperature for growth.

After–Planting Care

Vegetatively propagated plantations may start fruiting after three years of planting. When planting is done by using seeds, first fruiting starts after five years of sowing. During the period from planting to first fruiting occasional weedings are done to promote the growth and multiplication of shoots. After the plants start flowering more care has to be taken with regard to weeding and cleaning operations. In Winter season clearing of dry leaves of the cardamom plant and removal of weeds is done before flowering. Otherwise field rats get an excellent opportunity to attack the plants and destroy the flower buds. Clearing and weeding of the plantations in the months of May-June is done to promote the healthy growth of new shoots. Flowering starts from April-May and continues upto June-July according to variety and growing condition. Before the fruits are ready for harvest (August for Sawaney and September for Ramshai and Golshai) a final cleaning of the plantations is done by removing old and dried leaves and weeds in order to prevent the damage of fruits by rats and other wild animals.

Harvesting Operation

The fruits of Sawaney variety will be ready for harvest in the months of August-September and of Ramshai and Gloshai in October-November. Harvesting is done by cutting the panicles containing ripe fruits with the help of a long chisel - shaped narrow knife, which is specially made for the purpose. At the time of harvesting old, sterile dried shoots which do not bear fruits are also removed. by the same knife.

Post-harvest Processing

Fruits are separated out of the harvested panicles for drying/

curing. On an average, fruit forms 50 per cent by weight of the panicle. The fresh fruits are dried on a kiln which is made by local cardamom growers in the plantations itself. Wet and fresh cut wood which does not burn well but gives lot of smoke is used for fuel in the kiln so that temperature do not rise high. For good curing only low temperatures are required. Over the kiln, a thin structure of bamboo is put on which harvested fruits are spread for curing.Once the kiln is started, it takes about three days of continuous smoking for complete curing/drying. A kiln of 2.4 X 2.4 X 2 4 meter has the capacity to dry 12 bags of fresh fruits Approximately 33 per cent of the fresh weight of fruits is recovered after drying is complete.

Yield

During third year when first flowering starts in new plantation the yield of dry fruits is negligible (25 kg or so per hectare). In subsequent years, every year the yield increases till it is maximum in sixth or seventh year of planting. Yield at this stage varies greatly (3 to 10 quintals of dry cardamom per hectare) according to the management and growing conditions of the plantations. For one or two years the maximum yield is maintained and then it starts declining to a considerably low level in the twelfth year. Rate and extent of yield decline, again is very much dependent on the management and growing conditions. Some well managed plantations can yield profitably even upto 20 years.

(iii) PROBLEMS AND LINES OF RESEARCH AND DEVELOPMENT

It is surprising that large cardamom, which was recognised as "most profitable crop" even at the time of Sir J. D. Hooker's expedition in Sikkim (1849) and which has been reported as "much prized and of considerable value" by Gazetteer of Sikkim (1896) could not attract any attention from the agricultural planners of the country. Hardly any effort has been made to understand the problems of large cardamom cultivation processing and marketing, eventhough the gaps between high yielding, well managed(10 qtl/ha dry fruits yield and longevity of plantations for 20 or more years) and low yielding and ill managed (2 qtl/ha dry fruits yield and longevity of plantation for 6 years) plantations were very apparent. In the absence of any research and development support the large cardamom plantations continued to deteriorate In the ensuing text an effort has been made to analyse the problems of large cardamom production in Sikkim and to identify the lines of research and development work.

Problems of Cultivation

1. PLANTING MATERIAL

Since large cardamom is propagated vegetatively, quality of planting material plays an important role in determining the productivity and life of plantations. In the absence of any organized agency for supplying suitable and healthy planting material, farmers plant whatever they get easily. Very often planting material carry diseases along with them and within a very short time the plantation is destroyed

2. AGRONOMY

Large cardamom plants which bear fruits for may years must be having specific requirments for space, nutrients, soil moisture and inter-culture. In the entire life time of the cardamom plantation no fertilizer or manure is ever added. It is hard to belive that the major and micro -nutrients taken up by the plants would remain unexhausted in the soil. Similarly overcrowing of the plants, presence of weeds and absence of suffieient soil moisture at the cirtical stages of plant growth and development would be definitely causing deterioration of the productivity of such plantations.

3. DISEASES

Furkee virus disease is singular cause for the deterioration of most of the cardamom plantations. Plants affected by this disease start producing very stunted sterile shoots Within two or three years the entire clump is reduced to stunted growth fo shoots which do not produce flowers. The shoots dry up causing the death of entire clump subsequently. Examinations conducted on *Furkee* virus under electron microscope have revealed the presence of spherical round particles. An insect vector named as *Micromyzus kalimpongensis* has been identified with the spread of the *Furkee* virus disease. Activity of this insect is highest during spring season.

Chirake virus disease is identified by the presence of brown stripes on the leaves. The disease

affects the productivity of cardamom plants possibly by affecting the photosynthetic efficiency of the affected leaves.

4. PESTS

Flowers and fruits of the large cardamom are damaged extensively by rats and other wild animals which feed on the immature fruits.

Problems of Processing

Since the harvesting of fruits from the entire plantation is done at one time and at the convenience of the farmer, the harvested produce contains fruits of different stages of maturity, which causes variations in the appearance and quality of processed fruits. The method of processing which is very crude and unstandardised results in poor skin colour and quality of dried fruits. Good skin colour of fruits attracts higher price. Uncontrolled heat in the locally made kilns destroy many valuable chemical constituents of cardamom seeds facilities for storing the dried fruits are inadequate and unsatisfactory causing loss of good skin colour during the period of storage.

Problems of Marketing

Almost the entire quantity of cardamom produced in Sikkim is transported by road from Sikkim to Siliguri which is the focal point for onward distribution to consuming markets. The system of sale is mostly on consignment basis. Perhaps the absence of well recognised standards of quality is responsible for the traders in consuming markets to prefer purchases only on consignment basis. Cardamoms are also sent to the Commission Agents in the consuming markets who would dispose them off on behalf of their principals in the producing centres. The present system of trading of cardamom through Commission Agents has many limitations including the speculative tendencies resulting in unwarranted price fluctuations. Of the huge profit made by the cardamom merchants very little share goes to the grower. Since last year, State Trading Corporation and Co-operative agencies have started taking interest in cardamom marketing.

Suggestions on development and research

A. Action to be taken by the Development agencies

1. Healthy and vigorous planting material should be maintained in Government nurseries for distribution to the cardamom growers.

2. Since seedling raised by the seeds do not carry virus disease, efforts should be made to raise such seedlings in nurseries for distribution to the cardamom growers.

3. *Furkee* – disease affected plants in the cardamom plantations should be uprooted and gap filled up by planting healthy plant materials

4. Cardamom growers should be educated on the advantages of clean cultivation.

5. plantations having inadequate shade should be planted with appropriate tree species

6. Diversion of perennial water channels already existing in the plantations should be made to areas where plants wither due to shortage of soil water during dry periods.

7. During spring season, spray of suitable insecticides should be done to control the activities of *Furkee* virus vector.

8. Community programme for the control of rats and other pests should be taken up.

9. Suitable storage facilities may be developed in cardamom growing areas so that fruit skin colour does not deteriorate during storage.

B. **Action on processing of cardamom**

In cardamom growing localities kilns operated by the Government may be started in order to maintain the standards of processing

C. **Marketing**

1. Growers participation in regulating the sale of cardamom should be encouraged.

2. In order to create export markets, sale promotional work in different potential markets may be undertaken by the Government through an organisation like Cardamom Board.

D. **Actions to be taken up by the Research Organisations**

1. Clonal selection for evolving suitable varieties for different agro-climatic regions should be immediately taken up.

2. Management practices viz. propagation techniques, planting method, population

density, manurial requirements, irrigation needs and intercultival operations, should be worked out and standardised for particular locality and variety.

3. Role of growth-promoting substances in increasing the fruit size and improving the quality of seeds should be worked out.

4. Determined and consistant efforts should be made to control diseases and pests.

5. Right stage of ripening for harvesting of the fruits should be determined.

6. Curing/drying of the fresh fruits should be scientifically standardised in order to get good quality fruits at low fuel consumption. Work on design of kilns should be taken up and specific temperature and other requirements of drying should be worked out.

7. Research work should be taken up to exploit the various chemical ingredients in the large cardamom seed for medicinal and industrial uses.

In the month of october 1977 a regional centre of the ICAR Research Complex was opened in Sikkim at Gangtok. Scientists of the centre are making efforts with whatever resources they could muster to answer some of the above mentioned problems. □

Quality Control of Fertilizer & Insecticides

In addition to 36 fertilizer quality control laboratories, 17 insecticides testing laboratories are being established in different states under a centrally sponsored scheme for checking the quality control of fertilizers and insecticides Besides, 220 joint quality control inspectors are being appointed Under this scheme the Government of India gives 100 per cent grants for the appointment of laboratory staff, for the purchase of laboratory equipments and contingencies. In addition, the central government meets the full expenditure for creating a technical cell at the State headquarters for ensuring sound implementation of the scheme. However, only 50 per cent of the cost is met by the Union Government for the appointment of joint quality control inspectors. The remaining 50 per cent is met by the State Governments. The scheme has been in operation for the last two and a half years.

During the period of operation of the scheme till to date, 26 fertilizers quality control laboratories and 12 insecticides quality control laboratories have been approved by the Central Government for being set up in different states and '76 posts of joint quality control inspectors have been approved for appointment. It has been impressed upon the State Governments to implement the scheme speedily so that more and more of inputs (fertilizers, insecticides and seeds) samples are drawn from different sale depots in the country for quality test. The laboratories are at various stages of establishment in different States. The Union Minister of State for Agriculture and Rural Development has addressed the Chief Ministers of the concerned States to give high priority to this scheme and ensure early establishment of laboratories and appointment of required staff so that adequate facilities could be created in the States for analysing samples collected from various fertilizers and insecticides sale depots. As sufficient facilities already exist in the states for seed testing no additional laboratories are being created for seed testing under this scheme.

The use of fertilizers and insecticides has been progressively increasing in the country with the advancement of agriculture. Larger demands of these inputs at crucial moments can create conditions to bring sub-standard materials in the market. This has necessitated the creation of facilities for having a check on the quality of these essential inputs which happened to be one of the most expensive items of expenditure incurred by the farmers.

The fertilizer control order empowers the state government to take action against the defaulters. It was felt that the State Governments did not have adequate facilities for drawing a large number of samples of fertilizers insecticides and also seeds for the purpose of testing their quality and sales. The centrally sponsored scheme in question was introduced to effect this check.

The facilities that are being created by the Central Government and the steps already taken by the State Governments in tightening the quality control measures already appear to have started yielding results. As input distribution has wide coverage, fertilizers quality control required further strengthening both by the Central Government and the State authorities. Steps are being taken in this regard and it is hoped that in coming years with the proposed establishment of larger number of quality control laboratories, appointment of more joint quality control inspectors and strengthening or control measures, the farmers could be assured of desired quality of fertilizers and pesticides which they would be requiring more and more to boost their production in years to come.

SIKKIM - An Agriculturally Potential State

JOHN M. JOHN

Shri John M. John, Assistant Director, Cardamom Board was one of the members of a team that recently conducted a survey on large cardamom in Sikkim and Darjeeling District of West Bengal. Making an evaluation of the various agricultural crops the author opines that Sikkim is an agriculturally potential State that requires further intensive exploitation of its valuable resources for the overall development of the State. He suggests that the small farmers, who constitute more than 50% of the cultivators should be provided with all assistance, financial as well as technical, for the sustained agricultural growth of the State. – *EDITOR*

Sikkim, the 22nd State of India having an area of 7300 Sq km. is situated at an elevation of 310 meters to 3720 meters. above M. S. L. in the North Eastern Himalayan region. It is a land locked State, bounded by Tibet on the North, Darjeeling District of West Bengal on the South, Nepal on the West and Bhutan on the East. The State with Gangtok as its Capital is divided into 4 Districts namely East, West, South and North with Gangtok, Gyalshing, Namchi and Mangam as District Headquarters respectively. It has a total population of about 3 lakhs.

The climatic conditions range from sub-tropical at the lower elevations to Alpine at higher altitudes with major area coming within temperate climate. The annual rainfall varies from 203 cm to as high as 508 cms, the peak rainfall period being May to October. The period November to February is usually clear with only scattered rains.

Sikkim is an agricultural State with more than 90% of the total population and households depending solely on agriculture for their livelihood. More than 50% of the cultivators own lands below 2 hectares and holdings of not more than 4hectares constitute about 70% of the total holdings. The agricultural lands in the State in general are on the slopes of the hills. The undulating topography of the land makes conditions for cultivation difficult and diverse. The soils in general are sandy, light and porous as a result of which the soil moisture is lost very rapidly especially during the dry months. Land slides are very common during the rainy season and the surface soils are subjected to continuous wash off. Hardly 50% of the cultivated area is terraced and proper drainage facilities provided. Thus soil erosion is the biggest problem of the State and it may be necessary to evolve methods of soil conservation with lower investment for adoption by small and marginal cultivators.

Sikkim is presently a deficit State in production of food crops. It imports annually 16,000 to 20,000 tons of cereals viz. rice, maize, etc. Among the cereal crops grown in the State, maize stands first in area and production. It is cultivated on altitudes ranging from 372 meters to 2480 meters. Paddy, which is the staple food of the State comes second in area and production. This is cultivated on elevations ranging from 372 meters to 1860 meters but the major area is concentrated on altitudes below 1550 meters. The local varieties of paddy which are of long duration, tall, susceptible to lodging and not very responsive to fertilizers are being replaced by improved varieties recently introduced into the State. The next important cereal crop grown in the State is wheat. It has tremendous potential for cultivation even upto 2170 meters above M. S. L. and the Department

of Agriculture has taken up an ambitious programme for rapidly bringing more area under wheat cultivation. Barley, Buck wheat and Ragi are the other important cereals grown in the State.

Large Cardamom (Ammomum subulatum) is the most important cash crop of the State. It produces on an average 2400 tonnes of cardamom annually valuing about Rs. 2. 4 crores from an area of about 8100 hectares. Its cultivation is confined to lower elevations ranging from 310 meters to 1550 meters above M.S L.Considering its importance as the major commerical crop of the State, it deserves to be given priority for detailed investigation on development of suitable cultivation, processing and marketing techniques. Ginger, another important cash crop of the State is cultivated all over the State mostly concentrated below 1240 meters above M. S. L. The local varieties cultivated are of fibrous, less pungent and poor yielders. Hence, efforts are being made to introduce high yielding varieties like Rio de generio and Nadia in the State.

Tuber crops like Potato, Tapioca are also grown extensively and trial cultivation of new varieties of high yielding types is in progress. Almost the entire requirement of vegetable oil is met from outside States. Only crops like Mustard, and Rai are cultivated in this State and that too only on a very limited scale. But there is vast scope for extensive cultivation of these oil seed crops provided due encouragement is given to the farmers for taking up large scale cultivation. The total acreage under Pulses cultivation is about 4050 hectares. The varieties grown are local ones only. Sikkim State has also great potential for growing fruit crops. Orange, apple, pears, guava, plum, peaches etc are the important fruit crops grown in Sikkim. The Department of Agriculture has recently introduced certain improved varieties of fruit plants, the important among them are pears, guava, plum, peaches and walnut. Vegetables like raddish, cabbage, cauli flower carrot, turnip, spinach, peas, beans, ladys' finger, brinjal, cucurbits, tomato etc. are also cultivated extensively in the State.

Sikkim with its valuable resour- in the agricultural front needs further intensive exploitation for the alround development of the State. Crops and varieties suited to different agro-climatic conditions prevailing in the State have to be studied in detail for their economic cultivation. Soil erosion which poses a serious threat to the development of agriculture requires detailed study for adoption of suitable soil and water management practices. In addition to making available necessary technical know-how, it is felt imperative to provide financial assistance to the small and marginal farmers who predominate in this field for the sustained agricultural growth in the State. Let us hope that the State of Sikkim will take agriculture to new heights of acheivemant leading to gener ation of more jobs and more income to the rural people in the years to come.

□

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A UNIQUE CARDAMOM AUCTIONEERING HOUSE IN INDIA FOR ALL GRADES OF EXPORT QUALITY CARDAMOM

BAHRAIN

Following is an except on Bahrain from the report on the market survey jointly carried out by Cardamom Board and International Trade Centre, Geneva in the Middle East and West European countries. The survey team consisted of Shri N. Bharathan Pillai, Market Development Officer, Cardamom Board and Mr. Brian Mc. Loughlin, Marketing Consultant, International Trade Centre. The first of this series on Kuwait appeared in the July-August issue. —EDITOR

INTRODUCTION

Bahrain, while a small market with a population of only 256,000, is in microcosm an indication of the future of other markets in the Gulf area. In spite of widespread westernisation in life-style and consumption habits, cardamom coffee consumption is still socially obligatory and overall cardamom consumption is rising. Preferences for cardamom have changed, however, and today in Bahrain, Guatemalan cardamom is preferred to Indian, on the grounds that it is better in appearance and the quality is more consistent.

IMPORT HISTORY

It is not possible to analyse the Bahrain cardamom imports to the same extent as has been done for other markets. The National Statistics for Bahrain do not separately record cardamom imports; they are classified in the group "spices except pepper and pimento". Accordingly, we can only draw general conclusions from the basic import data. The available import figures are set out in Table 2.

In volume terms the importation of cardamom in Bahrain appears to have grown by 116 per cent between 1973 and 1976. As in Kuwait, there is a high level of re exports accounted for 64 per cent of imports in 1976 and trade sources estimate that the real proportion of exports is probably close to 80 per cent.

Once again, it must be emphasised that the import statistics include other spices, so the percentages given in Table-I do not total 100 per cent and the Indian market share may be exaggerated since India, unlike Guatemala, is a major producer of other spices and the imports from India include a wide range of spices other than pepper, pimento and cardamom.

The picture presented is one of rapid erosion of the Indian share of the market, though with some recovery in recent years. The recovery in the Indian share of

TABLE - 1

SHARE OF IMPORTS – VOLUME BASIS

	1972 %	1973 %	1974 %	1975 %	1976 %
India	50.9	35.5	36.4	38.3	50.7
Guatemala	9.9	24.0	36.5	28.4	18.5
Sri Lanka	0.5	1.3	1.8	0.8	0.1

SOURCE: Compiled from National Foreign Trade Statistics – Bahrain

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TABLE-2

IMPORTS OF OTHER SPICES INCLUDING CARDAMOM, EXCLUDING PEPPER AND PIMENTO, INTO BAHRAIN - BY SOURCE

(Note : Separate statistics for import of cardamom are not available in published sources. The data is for "Spices" (except pepper and pimento whether or not ground)

Year	Source	Quantity (M T.)	Value (Rs. '000s)	Value ($'000s)
1972	India	313 2	7,041	879.3
	Guatemala	61.0	2,535	316.6
	Sri Lanka	3 1	91	11 4
	Total (including other countries)	615.0	12,787	1,596.8
1973	India	170 1	6,007	738.9
	Guatemala	115.3	4,114	506 0
	Sri Lanka	6.4	N. A.	N A.
	Total (including other countries)	479.8	19,177	2,351.4
1974	India	182.7	7,362	911.4
	Guatemala	183.3	7,031	870.4
	Sri Lanka	8.8	N. A.	N. A.
	Total (including other countries)	502.2	16,652	2,061.4
1975	India	303.4	9,568	1,070.6
	Guatemala	224.4	14,952	1,761.7
	Sri Lanka	6.2	N. A.	N. A
	Total (including other (countries)	790 7	29,775	3,331.7
1976	India	527.7	15,777	1,776 5
	Guatemala	192.0	15,646	1 761 7
	Sri Lanka	0.7	N. A.	N A.
	Total (including other countries)	1,039 4	37,020	4,168.4
RE-EXPORTS OF CARDAMOM FROM BAHRAIN:				
1973		244.0	9,679	1,190.5
1974		363.9	14,018	1,735.3
1975		490 1	24,247	2,713.1
1976		664.8	29,978	3,375.5

the market may be partly attributable to the rapid closure of the price differential between Indian and Guatemalan supplies.

The implications of the changing balance in the market are more clearly illustrated in Table-3, which gives details of exports of cardamom from India to Bahrain. This table once again illustrates that in the most recent year for which data is available, there has been a marked recovery in Indian exports to Bahrain. This table also demonstrates that Bahrain is almost exclusively a market for Alleppey Green cardamom. While the quality standards in Bahrain may not be as high as in some other Gulf markets, the preferred qualities are AGB or better.

Once again, however, for Bahrain it must be noted that the principal influences on the market are not local. It is the reaction of the consumer in Saudi Arabia, rather than the local Bahraini, that influences the import trends.

USAGE

The principal usage of cardamom in Bahrain is in Gahwa - -cardamom coffee. The tradition of Gahwa consumption is still deeply entrenched in Bahrain, which is probably the most westernised of all the gulf states. It is therefore, Bahrain that could be expected to confirm any trend towards lower cardamom coffee consumption among the more westernised segments of the population. On the contrary, it is found that the outward appearance of the adoption of a more European life style has had little or no impact on the consumption of Gahwa. Social pressures are still so strong that even the most westernised of Bahrainis feels

TABLE-3

EXPORT OF CARDAMOM FROM INDIA TO BAHRAIN DURING 1971-72 TO 1975-76

Year	Grade	Quantity (M. T.)	Value (Rs. 000s)	Value ($'000s)
1971-72	Alleppey Green	89	3,609	424.6
	Coorg Green	3	67	7.9
	Bleached/Bleachable	1	48	5 6
	Seeds	—	—	—
	Others Mixed	1	40	4.7
	Total:	94	3,764	442 8
1972-73	Alleppey Green	37	2,077	244.4
	Coorg Green	Neg	13	1.5
	Bleached/Bleachable	2	123	14.5
	Seeds	—	—	—
	Others Mixed	—	—	—
	Total:	39	2 213	260.4
1973-74	Alleppey Green	55	3,700	435.3
	Coorg Green	Neg	35	4.1
	Bleached/Bleachable	1	92	10 8
	Seeds	—	—	—
	Others Mixed	—	—	—
	Total:	56	3,827	450 2
1974-75	Alleppey Green	43	4,004	471.1
	Coorg Green	Neg	54	6.4
	Bleached/Bleachable	—	—	—
	Seeds		—	—
	Others Mixed	Neg	3	0 4
	Total:	43	4,061	477.9
1975-76	Alleppey Green	148	16,149	1,899.9
	Coorg Green	—	—	—
	Bleached/Bleachable	—	—	—
	Seeds	—	—	—
	Others Mixed	—	—	—
	Total:	148	16,149	1,899.9

SOURCE: Cardamom Board, India.

obliged to serve Gahwa to any visitor to his home. It is unlikely, therefore, that the rapid change in life styles, which most informed sources anticipate throughout the gulf, will materially affect the consumption of cardamom

As in other gulf markets, there is also a small secondary usage of cardamom in cookery. The Arab indigenous population have absorbed a considerable degree of Indian cooking (many of their cooks are actually Indian). So there is a small consumption of cardamom in biryani (a race pilau) and similar dishes. However, this usage is relatively unimportant in relation to the volume of cardamom consumed in the making of Gahwa.

CONSUMER PATTERNS

The population of Bahrain is 256,000 approximately and is, unlike other Gulf markets, mainly composed of native Bahrainis. Reliable statistics on the breakdown of this population are not available. It is known that there are about 75,000 non-Bahrainis of whom Pakistanis and Indians are the largest population sub-groups

Some 100,000 people live in the capital- Manama. The male/female split of the population of Bahrain is: 54 per cent male; 46 per cent female; while by age, the population breaks down as follows:

Population by Age

	%
Under 15	44
15-35	31
35-55	18
55-65	3 6
Over 65	3.4
	100

SOURCE: U.N.

Only about 28 per cent of the population are economically active, the proportion of males being 52 per cent, while among females the incidence of employment is very low at 2.4 per cent.

No up-to-date information is available on household incomes, though the average household

size is 5 04 persons and the average breakdown of household expenditure is:

Analysis of Household Expenditure

	%
Food	15
Beverages and tobacco	3
Fuel	3
Clothing	30
Miscellaneous (including housing)	49
	100

SOURCE: International Advertising Association (IAA)

Levels of literacy are low, at only 16 per cent of the total population.

In Bahrain, as in all other Middle Eastern markets with the exception of Iran, the purchaser and principal decision maker on cardamom purchases is male. The purchase decision is usually exercised by the head of the family.

DISTRIBUTION

Cardamom in Bahrain is distributed through a network of wholesalers who also act as importers. The number actually importing cardamom varies considerably with market conditions but there is a hard core of importers who always carry cardamom. One of these is the Bahrain agent for a major Guatemalan exporter. The importer/wholesalers, who also carry a wide range of other grocery products, sell not only to the local Bahraini retailers but also to retailers on the Saudi Arabia mainland In the case of supplies to Saudi Arabia, they are normally transported by sea from Bahrain by motorised dhow. Sales to the local retailers are primarily on a take-away basis; there are longish credits of one month to 45 days. Since the importers are in the main wholesalers as well there is little scope for an intermediate level of wholesaler Cardamom supplies are sold directly by the importer to the retail outlet.

The principal retail outlets for cardamom are the 300 (Cpproximatelty) raditional souk-style grocery stores which sell a wide range of goods in addition to cardamom. Most of these stores carry spices, pulses, tea, coffee and some packaged goods Retail selling is mainly in bulk, with a small quantity kept for display purposes in an old sweet jar, and purchase is on a weight basis.

Cardamom is not usually on sale in the more modern self-service stores which are a feature of retail development in Bahrain. Already there are five large supermarkets and 75 smaller self-service stores, normally referred to locally as ' cold stores". This distribution channel to reach these supermarkets and "cold stores" is broadly the same as for the more traditional outlets except that the larger store groups are now undertaking importation of certain commodities in their own right, thus by-passing the wholesaler/importer level which is the normal channel for imported products to reach the Bahrainian market.

Trade margins in Bahrain are as follows:

Importer – Wholesalers	10–15 per cent
Retail – Consumer	20–25 per cent

These margins will vary depending on the price of cardamom and availability of suppliers. In a tight supply situation in the market, wholesale margins will frequently increase rapidly.

Virtually all wholesalers handle staple items, though in the case of cardamom at present, the number of wholesalers active in the market is quite small. In the case of cardamom from Guatemala, there is a sole agent for Hawaii agroexports

It is normal in Bahrain for exporters to appoint a sole agent but the selection of such an agent must be considered very carefully as the Bahraini regulations on agency representation are very stringent. It is, therefore, extremely difficult, once an agent has been appointed, to terminate an agreement without payment of substantial compensation.

In order to extend distribution into supermarkets and cold stores, consumer-size prepacks would be required. However, this may present problems because of the great variety in the size of each purchase. The size of pack considered by the trade to be most appropriate by these outlets would be; 1lb, ½lb and ¼lb (in Bahrain the Imperial measures still tend to be used in the retail trade). The form of packaging which would be required would be vaccum-packed tins or foil packs, since the humidity levels at certain times of the year are very high.

The wholesale and retail trade in Bahrain are highly brand-conscious Accordingly, if cardamom is to be effectively sold in the developing retail outlets,

exporters will need to develop consumer brandings where the cardamom quality is absolutely consistent from pack to pack and from season to season.

Trade attitudes towards Indian Cardamom in Bahrain are at present unsatisfactory, and Guatemalan supplies are preferred by most outlets. The principal reason for this is that cardamom from Guatemala is seen to be of consistent quality and is normally readily available throughout the year. The converse applies to Indian Cardamom. Wide Variations in quality between initial sample and the cardamom delivered, occur. In addition, Indian exporters are unable to guarantee supplies of the appropriate gardes (AGB+) throughout the year. There is, accordingly, little respect for the Indian quality control systems as they currently function and traders have come to rely on Guatemalan standards. New crop supplies from Guatemala are normally not available in time for the pre-Haj trading peak in November/December because of the 4-month shippping time; thus, India has a distinct trading advantage during this important season for cardamom consumption.

IMPORT PRACTICES

The import structure in Bahrain is unique in the Gulf area; there are no socialist cardamom importers and cardamom is handled alongside a wide range of staple and non-staple food and grocery items, by highly commercial wholesalers with a degree of market orientation not noticeable elsewhere in the Gulf. Each wholesaler will have, in his own right, the import agency for certain brands and this is the normal basis of business. The free commodity market methods used in the cardamom market are, therefore, the exception rather than the rule in Bahrain.

importers must register annually with the Government the range and type of goods which they wish to import. There are no restrictions on any importer from placing cardamom on his importing list, but many trade in cardamom only when market circumstances suit. Thus, the importation pattern of Indian Cardamom can become very erratic with a large number of importers active at certain times – and very few with Indian Cardamom in stock at other times. Guatemalan supplies through the exporter's sole agent are more consistently available. And because Guatemalan prices are stable throughout the year, wholesalers can place contracts for future delivery with the reasonable expectation of delivery.

For Indian Cardamom purchase is usually against sample. In the case of cardamom from Guatemala, however, the grade specification is used frequently. Trade sources are consistent in the view that Guatemalan No. 1 grade is the most suitable for the Bahrain market.

Different standards apply when importer/wholesalers are dealing with Saudi Arabian retailers. Here, the practices are more traditional with purchase against sample rather than by grade. The Saudi Arabian retailers or wholesalers come to Bahrain because of the much wider range of goods available, and transport their purchases by country craft to small eastcoast ports. It is, perhaps, indicative of future difficulties for Indian exporters that these buyers from the key market for cardamom now accept Guatemalan cardamom.

TARIFFS AND REGULATIONS

There is a duty of 5 per cent ad valorem on imports of cardamom to Bahrain. In addition, there are certification and handling fees which vary from time to time but which at present add a further 2 per cent to C & F prices. The 5 per cent duty is not seen as a significant barrier to cardamom imports.

PROMOTION

At present there is no active promotion of cardamom in Bahrain.

DEMAND ASSESSMENT

No significant correlation exists between cardamom consumption in Bahrain and either income or prices. The reason is that the market conditions in Saudi Arabia are a more important determinant of market trends than those in Bahrain.

Bahrain is a major entrepot in the Gulf area. Accordingly, its importance increases when port delays or other logistic difficulties arise in the larger consumption markets which surround it. As a result, the trade find it difficult to forecast import trends with any certainty.

Imports over the past year have shown a marked upward trend and it is likely that this will be maintained if adequate supplies of appropriate qualities are made available to the market. Consumption in the home market is seen to be showing an upward trend

but this only accounts for a maximum of 25 per cent of all imports.

PROPOSED STRATEGIES

Promotional objectives for Indian Cardamom in Bahrain are clear. First, the reputation of Indian Cardamom should be restored and, second, it must be maintained at a high level. A third and longer term promotional objective should be to remind the consumer of the benefits and satisfaction that they can obtain from cardamom, so that in a very dynamic period of social change, the strength of the cardamom consumption tradition will continue to be maintained.

To fulfil these objectives, a number of different strategies will be necessary, not all falling within the conventional definition of promotion. To the consumer it must be communicated directly by media advertising and display material that Indian Cardamom is the best, most flavourful, and socially prestigious To the retailers it is necessary by the same executions as those for the consumer, to re-establish the reputation of Indian Cardamom. And to the importer/wholesalers the message must be communicated - and justified - that Indian Cardamom is the best cardamom available, that Indian Cardamom is consistent in quality and available in adequate quantities when required.

Adequate media exist to execute the consumer promotion strategies; television gives 85 per cent coverage and there are a selection of local press media. However, the effectiveness of press as a medium anywhere in the Gulf is limited for mass market products, because of the relatively low rates of literacy. □

ANNEX

PRINCIPAL IMPORTERS OF SPICES & CARDAMOM IN BAHRAIN

P. Haridas & Sons,
P. O. Box 434,
Bahrain

Abbas Mansoor Sanad & Bros.,
P. O. Box 94,
Bahrain.

V. Miljimal Bros.,
P. O. Box 6,
Bahrain.

A. Rasool Haji Baqer Beljeek,
P. O. Box 308,
Bahrain.

Damodhar Devidas and Bros.,
P. O. Box No 97,
Bahrain.

Shehab Ahmed Shehab,
Tijjar Road,
Shop No. 460/C2,
Bahrain.

Khalil bin Ali Lari and Sons,
P. O. Box 581,
Bahrain

Mohd. Ali Zainal Aboulla,
P. O Box 593,
Bahrain.

Khushaldas Valabdas & Sons,
P. O. Box No. 206,
Bahrain.

Valabdas Muljimal and Bros.,
Tijiar Road,
Post Box 6.
Bahrain □

Trade Enquiry for Cardamom

1. M/s. Fong Hoon Limited,
   G.P O Box 329,
   Suva, Fiji.

2. M/s Asian International Agencies,
   P O.Box No. 10,
   75 Sadar Road,
   Barisal,
   Bangladesh.

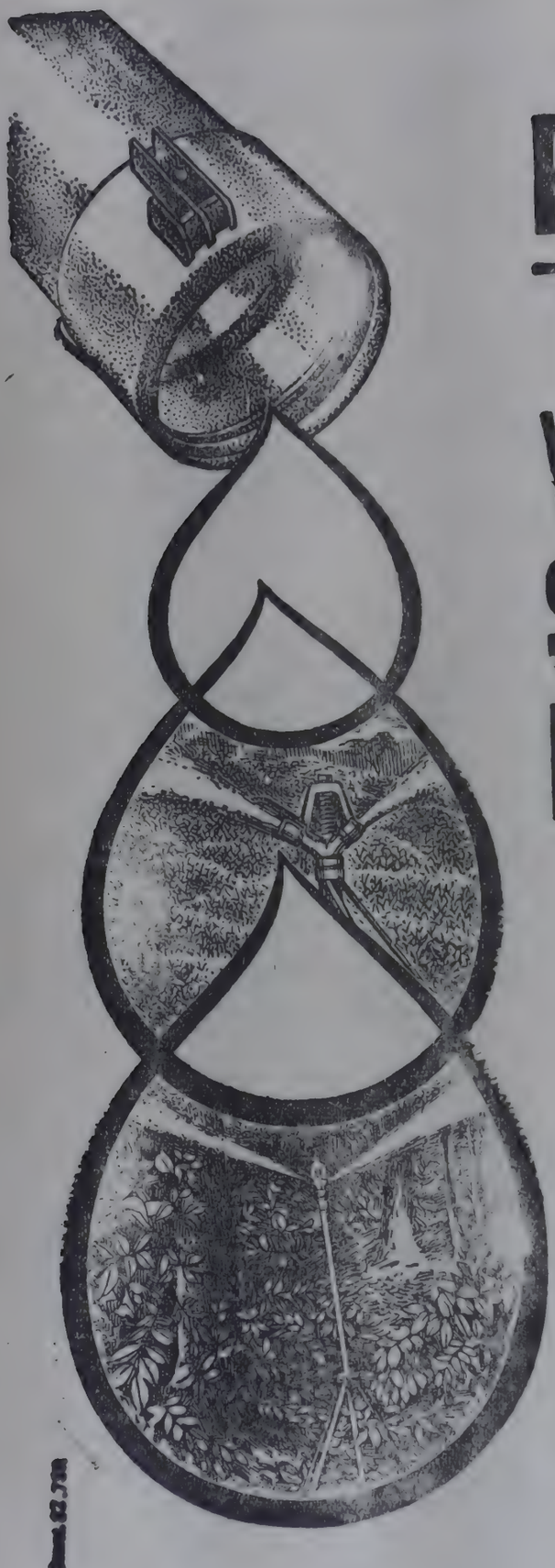
3 Mr. P.K. Padmanabhan,
   210 Jor Bagh,
   Ist Floor,
   New Delhi 110 003.

SALES AND PRICES AT

Centre	JULY 1978 Date of auction	Sales (kgs.)	Rate (Rs./kg.) Maximum	Minimum	average	JULY 1977 Date of auction	Sales (kgs.)	Rate (Rs./kg.) Maximum	Minimum	average
KERALA										
Vandanmettu	—	—	—	—	—	—	—	—	—	—
Udumbanchola	—	—	—	—	—	—	—	—	—	—
Santhanpara	—	—	—	—	—	—	—	—	—	—
Kallar	—	—	—	—	—	—	—	—	—	—
Cochin	—	—	—	—	—	—	—	—	—	—
TAMILNADU										
Pattiveeranpatti	2-7-1978	2909	170.00	107.00	137.08	10-7-1977	2284	165.10	50.00	103.92
	16-7-1978	1557	160.00	46.00	140.70	24-7-1977	1126	150.00	54.10	95.86
	30-7-1978	1186	164.90	90.00	141.36	—	—	—	—	—
KARNATAKA										
Mangalore	10-7-1978	17	138.00	138.00	138.00	—	—	—	—	—
	17-7-1978	10	131.00	131.00	131.00	—	—	—	—	—
Mercara	—	—	—	—	—	—	—	—	—	—
Sirsi	—	—	—	—	—	—	—	—	—	—
Saklespur	—	—	—	—	—	5-7-1977	810	170.20	109.00	121.13
	—	—	—	—	—	5-7-1977	6244	172.00	43.00	119.52
	—	—	—	—	—	6-7-1977	779	140.00	40.00	109.78
	—	—	—	—	—	7-7-1977	106	130.00	102.00	128.47
	—	—	—	—	—	7-7-1977	2681	173.00	72.00	115.67
	—	—	—	—	—	13-7-1977	44	100.50	71.10	97.90
	—	—	—	—	—	13-7-1977	881	135.80	75.00	122.83
	—	—	—	—	—	13-7-1977	1200	130.80	88.50	126.17
	—	—	—	—	—	16-7-1977	1527	126.80	75.70	112.26
	—	—	—	—	—	20-7-1977	107	130.00	120.00	124.69
	—	—	—	—	—	21-7-1977	1133	174.00	95.50	124.04
	—	—	—	—	—	26-7-1977	749	128.40	90.10	114.12
	—	—	—	—	—	26-7-1977	5129	176.00	85.00	108.25
	—	—	—	—	—	27-7-1977	81	128.00	108.50	122.30

CARDAMOM AUCTIONS

Centre	AUGUST 1978					AUGUST 1977				
	Date of auction	Sales (kgs.)	Rate (Rs./kg.) Maximum	Minimum	average	Dat eof auction	Sales (kgs.)	Rate (Rs./kg.) Maximum	Minimum	average
KERALA										
randanmettu	19-8-1978	6476	207.40	70.00	164.26	20-8-1977	15902	185.00	35.00	137.35
	—	—	—	—	—	24-8-1977	13359	177.20	32.00	135.47
	—	—	—	—	—	30-8-1977	13361	175.00	30.20	138.82
Udumbanchola	3-8-1978	686	157.70	134.30	152.39	19-8-1977	1110	153.90	111.10	135.58
	11-8-1978	1135	154.00	128.20	148.78	26-8-1977	2078	147.60	59.00	133.23
	18-8-1978	638	169.00	70.10	154.65	—	—	—	—	—
	25-8-1978	1926	175.00	143.40	167.42	—	—	—	—	—
Santhanpara	3-8-1978	4327	158.90	129.60	147.10	19-8-1977	5322	150.00	77.50	122.78
	10-8-1978	2358	157.70	126.00	146.81	19-8-1977	1389	139.40	68.00	120.96
	17-8-1978	2240	168.30	140.10	157.42	22-8-1977	733	144.00	43.50	127.73
	17-8-1978	2518	186.50	144.10	159.06	25-8-1977	2974	160.00	57.20	131.21
	21-8-1978	1616	174.66	41.00	160.26	—	—	—	—	—
	24-8-1978	6082	179.80	91.80	162.81	—	—	—	—	—
	28-8-1978	4264	195.00	138.80	174.81	—	—	—	—	—
	31-8-1978	8006	179.60	143.00	167.46	—	—	—	—	—
Kallar	16-8-1978	3514	169.00	99.00	154.73	17-8-1977	5761	155.60	54.10	122.72
	23-8-1978	3148	184.00	114.00	164.42	24-8-1977	3148	161.90	45.40	127.09
	30-8-1978	5661	190.10	50.00	167.95	31-8-1977	5934	155.00	24.00	124.10
Cochin	—	—	—	—	—	—	—	—	—	—
TAMILNADU										
Pattiveeranpatti	13-8-1978	720	160.00	90.00	125.46	21-8-1977	2625	166.00	46.00	118.12
	20-8-1978	1743	190.00	55.10	156.45	28-8-1977	1541	163.00	41.60	114.00
	27-8-1978	1096	184.10	72.00	142.56	—	—	—	—	—
KARNATAKA										
Mangalore	7-8-1978	16	140.00	140.00	140.00	16-8-1977	39	86.00	86.00	86.00
	14-8-1978	34	132.00	132.00	132.00	—	—	—	—	—
	28-8-1978	26	150.00	150.00	150.00	—	—	—	—	—
Mercara	25-8-1978	854	165.00	136.00	145.00	—	—	—	—	—



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Sales and Prices at Cardamom Auctions

Centre	AUGUST 1978 Date	Sales (kgs.)	Rate Rs. / kg Max	Min.	Av.	AUGUST 1977 Date	Sales (kgs.)	Rate Rs. / kg. Max.	Min.	Av.
Saklespur	24-8-1978	487	160.00	127.00	145 20	3-8-1977	151	164.00	51.00	120.70
	29-8-1978	930	197.70	114.00	157.35	4-8-1977	1105	144.50	55.00	104.35
	31-8-1978	453	160.00	90.10	147.50	10-8-1977	183	134.10	40.00	102.27
	—	—	—	—	—	16-8-1977	1797	163.30	70.00	107.28
	—	—	—	—	—	16-8-1977	556	171.50	90.00	112.15
	—	—	—	—	—	17-8-1977	51	145.50	68.00	99.06
	—	—	—	—	—	18-8-1977	1434	155.10	51.00	102.72
	—	—	—	—	—	23-8-1977	3250	152.20	53.00	112.01
	—	—	—	—	—	23-8-1977	313	134.00	67.50	108.00
	—	—	—	—	—	24-8-1977	37	109.00	81 10	86.28
	—	—	—	—	—	25-8-1977	1206	140.00	80.00	107 29
	—	—	—	—	—	25-8-1977	364	160.00	65.00	103.31
	—	—	—	—	—	30-8-1977	1865	144.00	58.00	116.16
	—	—	—	—	—	30-8-1977	450	125 00	73.50	112.14
	—	—	...	..	—	31-8-1977	7?5	176.40	80.00	107.83
Sirsi	23-8-1978	167	145.77	86.29	136.87	..	...	—	..	..

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Haveri — A place that Spreads Cardamom Fragrance

The traders of Haveri, a taluk headquarters in Dharwad District on Bangalore-Pune Highway ventured marketing valuable spices towards the beginning of the last century.

Although cardamom was never grown in or around the town, the adventurous traders of Haveri, who by then had established themselves as the 'Masters" of the cotton trade, lost no time in discovering the abundant potentiality of this tiny spice grown in the hilly terrains of Hassan, Saklespur, Mudigere and Sirsi Haveri earned the right mame "The gateway of cardamom business" when they took up processing and marketing of cardamom in the beginning of the last century.

The cardamom growing areas, in those days, were dense hilly forests which were subjected to rain almost throughout the year and were without road or rail communication. But Haveri had the necessary communication facilities and the suitable climate for processing. Cardamom transported in bullock carts through difficult terrains was processed to suit the taste of consumers. The white variety which was popular in certain foreign countries was prepared here through special indigenous processing.

In the beginning, the cardamom trade was done on 'Barter" system. Cardamom was exchanged for Jeera, dry grapes, cashewnuts and poppy seeds in North India and for Asafoetida, Saffron and Clove that were coming from foreign countries.

Monopoly Broken:

With the development of communication facilities after independence, cardamom processing and trading activities started in the growing areas and other centres. This broke the monopoly which the Haveri traders enjoyed for several decades. Haveri was earlier processing more than 50 per cent of the cardamom produced in the State But it has now come down to just 10 to 15 per cent. The increase in prices has also played its part. A maund (about 12½ kgs.) of cardamom which was costing Rs. 20/- to Rs. 40/- in those days, costs Rs.2312/- to Rs. 2875/- per maund today resulting in increased investment.

As a result, the processing and marketing business which was to the tune of five to six lakh kgs. a year in 1955 has dwindled to 2 lakh kgs a year and many traders had to move cut to the growing centres for continuing their business. At one time there were, in Haveri, more than 100 traders dealing in cardamom and nearly 200 families were engaged in processing which provided employment to nearly 2,000 people, mostly women. Today only 25 families are engaged in processing of cardamom and about 200 people are living on it. However, traders in cardamom have found a Co-operative Bank of their own. The Bank started in 1966 had a turnover of over Rs 6/ crores in 1977 and earned a net profit by over Rs. 50,000/-.

Though the grip over cardamom trade was gradually loosened, Haveri still has the pride of manufacturing different types of cardamom garlands and continues to have the monopoly over it.

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SERVICES/SCHEMES OF THE BOARD

We are beginning a new series on the various services/schemes of the Board for the development of the cardamom industry in the country. It is expected that this will give an opportunity to all interested sections connected with the industry to make use of these services as and when occasion arises

—EDITOR

A scheme for control of Katte virus disease was in operation since 1969-70 in selected contiguous blocks wherein the disease affected plants were destroyed and healthy seedlings supplied as free replacement. As a result of the implementation of this scheme the disease incidence was brought down considerably in the selected blocks. However, in the absence of disease resistant plants, and the slow progress of coverage due to intensive disease control work in the selected blocks, the progress did not commensurate with the rate of spread of disease. It was also felt necessary to enhance the sphere of advisory work from its limited scope within the selected blocks. Taking into consideration the major problems faced by the industry and fixing priorities, it was felt necessary to intensify the extension advisory service with wider coverage Thus a well-knit extension advisory service was established by the Board with effect from 1-4-1977, which interalia arranges for massive campaigns for educating the planters the need for and the methods of controlling the virus disease also.

An extension system more or less similar to "training and visit system" advocated by Mr. Daniel Benor, World Bank Consultant on Agricultural Extension is being implemented in this scheme. This aims at disseminating available information on cardamom production and processing by establishing field units in the producing areas to reach the entire planters through contact planters selected in the different cardamom growing regions. 28 Extension field units, each manned by an Extension officer have been established for advisory service through contact planters, numbering approximately 652 in the three states of Kerala, Tamilnadu and Karnataka as given below:

Kerala State : 16 Extension Units
Tamilnadu : 3 Extension Units
Karnataka : 9 Extension Units

After an year's implementation of the scheme, it was being increasingly felt by the Extension officials that the modus operandi of the scheme, which implies over-dependence on the selected contact planters for dissemination of information poses certain problems in its successful implementation in view of the peculiar nature of the cardamom industry

On careful consideration of certain aspects, it has been decided to modify the system of field visits and to introduce a general extension approach whereby the Extension Staff of the Board will be in a position to cover the entire area within their jurisdiction instead of limiting their visits to the selected contact planters. This general extension system is being adopted from 1-4-1978

The production and supply of good quality cardamom seedlings through the departmental nurseries of the Board is also one of the activities under the scheme 18 nurseries with a production targst of 15 5 lakhs seedlings annually are established as detailed overleaf:

Conforming to local planting practices, 18 months old seedlings are supplied in Kerala, Tamilnadu and 10 months and 22 months old seedlings are supplied in Karnataka. 6 months old cardamom seedlings fit for planting in the secondary nurseries are also distributed from these nurseries. The seedlings are sold

EXTENSION ADVISORY SERVICE

NURSERY		PRODUCTION TARGET
Vandiperiyar	Kerala State	1,00,000
Kumily		1,00,000
Vandanmettu		1,00,000
Kattappana		1,00,000
Udumbanchola		1,00,000
Santhanpara		1,00,000
Kallar-Vattiar		1,00,000
Kalpetta		1,00,000
Valparai	Tamilnadu	50,000
Batlagundu		50,000
Virajpet	Karnataka	50,000
Mercara		1,00,000
Somwarpet		1,00,000
Yeslur		1,00,000
Saklespur		1,00,000
Mudigere		1,00,000
Koppa		50,000
Sirsi		50,000
Total:		15,50,000

at no loss no profit basis to the growers. The Board also arranges supply of quality seed capsules/ seeds collected from selected seed plots with plants having desirable characteristics like high yield, bold and green capsules pest and disease resistance etc. for sowing purpose.

Encouraging the planters to raise seedlings in their own nurseries by imparting technical and financial assistance apart from opening of recognised nurseries in planters' field is also envisaged in the scheme. Seedlings produced in these recognised nurseries are utilized for distribution among the planters in addition to meeting the requirements of the nursery owners. A subsidy @ Rs 3,000/- per nursery with a production target of 12,000 standard seedlings is given, as an incentive for raising the nurseries. The seeds required for sowing in these nurseries will be arranged by the Board. 80 such certified nurseries with a production target of 9.6 lakhs seedlings annually are established.

The eco-environmental conditions suited for successful cultivation of cardamom have been up-set due to the indiscriminate felling of trees in the cardamom growing tracts. The heavy and long drought conditions prevailing in the cardamom growing areas during the past years coupled with deforestetion resulted in drastic reduction in cardamom production. This set back in yield could be rectified only by rejuvenating the forests in the cardamom growing areas. With a view to encouraging afforestation, the production and supply of 3 lakhs shade tree saplings annually through the nurseries of the Board is also implemented under the scheme.

In order to encourage the weaker sections of the cardamom growing community, the Board has launched a programme to organise small growers' clubs in the cardamom growing tracts as a part of the activities of the extension advisory scheme. The club aims at disseminating information on scientific cultivation of cardamom, exchanging experience and discussing the various needs of the industry in the locality and seeking assistance from the Board or Institution concerned. The deliberations of the meetings could also help the Board to get necessary feed back for planning the future lines of action.

In addition to the above, issue of technical feasibility certificates for obtaining loans from financial institutions, arranging massive campaigns to focus the attention of the growers on timely cultural and plant protection operations, organising seminars, group discussions, field visits etc. are the other activities under the scheme.

Moreover, the extension advisory service will form the infrastucture for all the field activities of the Board. The various other developmental schemes of the Board are implemented through the staff attached to Extension Advisory Service. The present field set up of the Extension Advisory Scheme is as furnished below:

A. **Regional Offices** (Manned by Assistant Director)

1. Mercara for Northern Zone
2. Ernakulam for Central Zone
3. Bodinayakanur for Eastern Zone

Overseas Trunk Calls From Ernakulam

Information has been received from the Overseas Communications Service Authorities that Remote Operator Dialling (ROD) facility has been made available to the Ernakulam Telephone Operator early this year This facility will enable the operator at Ernakulam to directly dial subscribers in countries viz. Australia, Bahrain, Hongkong, Iraq, Iran, Italy, Japan Kenya, Kuwait, Malaysia, Oman, Singapore, SriLanka Thailand, Dubai, U.K. and U.S A. and other authorised countries via these routes At present, one telephone circuit is operating from Bombay gateway to Riyadh (Saudi Arabia) via Bahrain. There are plans to provide a direct circuit between the International exchange at Bombay and Ernakulam.

B. Unit Offices (Manned by Extension Offices)

Under Northern Zone

1. Virajpet
2. Mercara
3. Somwarpet
4. Yeslur
5. Saklespur
6. Mudigere
7. Koppa
8. Sirsi

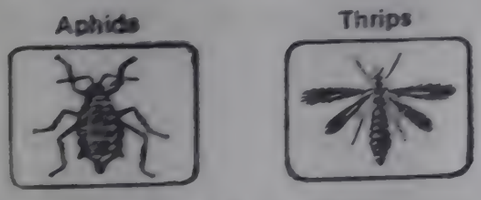
Under Central Zone

9. Vandiperiyar
10. Kattappana
11. Idukki (to be opened shortly)
12. Kallar-Vattiar
13. Palghat (to be opened shortly)
14. Tellicherry (to be opened shortly)
15. Kalpetta
16. Pollachi

Under Eastern Zone

17. Kumily
18. Vandanmettu
19. Pampadumpara
20. Nedumkandam
21. Udumbanchola
22. Santhanpara
23. Rajakkadu
24. Cumbum (to be opened shortly)
25. Batlagundu
26. Rajapalayam

Protect your cardamom from these pests



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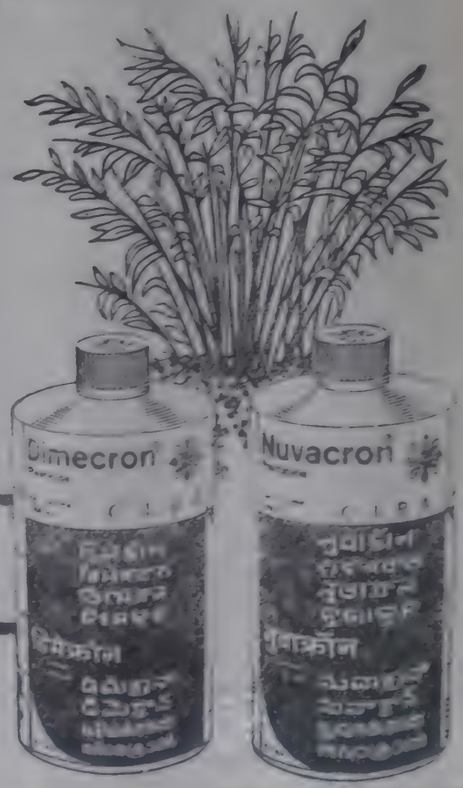

Cardamom Board has recommended
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CG/CM/77

Production & Exports

PRODUCTION

The final estimate of production of Cardamom for last season (1977-78) is placed at 3900 M.T. with state-wise break-up as:

Kerala	2900 M.T.
Tamilnadu	300 M.T.
Karnataka	700 M.T.
Total	3900 M.T.

On the basis of the present field indications reported by Board's field staff, a very preliminary estimate of production for the current season (1978-79) is placed at 4000 M T. with State-wise break up as:

Kerala	2900 M.T.
Tamilnadu	300 M.T.
Karnataka	800 M.T.
Total	4000 M.T

This will have to be revised according to later field assessments sometime in the end of September 1978.

Sales and weighted average prices at Auctions:

Auctions during 1977-88 season had already come to an end in Kerala by the end of April 1978 itself. However, there were auctions in Tamilnadu and Karnataka after April 1978. The State-wise auction sales and weighted average prices during 1977-78 compared to the previous season are given below:—

It could be seen from the above table that the total sales through auction during 1977-78 season is more than double compared to the sales during 1976-77. In Kerala the auction sales registered nearly triple rise. But 1976-77 being an year of below average production it will not provide a realistic comparison to 1977-78. The maximum sales through auction in Kerala ever recorded in the past was only 2114 M T. sold during 1971-72. The total sales of 2300 M.T recorded during 1977-78 shows an increase of 9% compared to the previous peak sales. More sales through auction means better price to the planters and this could be achieved by disseminating current information on prices, exports etc., to the planters and traders through Board's weekly bulletin "Cardamom Auction Prices".

AUCTION SALES DURING THE CURRENT SEASON

Auction of 1978 crop started in early August 78 in Santhampara and Udumbanchola However there was only one auction at Vandanmettu during August. The centre-wise sales and weighted average prices during August 78, August 77 Angust 76 and Angust 75 are given in the next page.

It could be observed from the above table that even-though the arrivals at Vandanmettu during August 78 was less compared to last season, the arrivals at Santhanpara was three times more than that of last season. Moreover, as the crop was a little late in Vandanmettu areas, only one auction was conducted in August 1978 at Vandanmettu against 3 auctions conducted during August 1977. It is also seen that there was no auction at Vandanmettu in Angust 76 and August 75 on account of late crop in that area. The sales at other centres in Kerala was 48 MT during August 78 as against 29 MT in August 77 6 MT in August 76 and 9 MT in August 75.

It is seen that the overall position of arrivals at auction in Kerala was not bad compared to last season. Against 69 MT sold in Kerala during August 77 we have 55 MT during the current season inspite of late crop in Vandanmettu areas. During August 1976 and August 1975, the sales in Kerala was only 6 M T. and 9 M. T. respectively. In the second auction conducted at Vandanmettu on 2.9.78 a quantity of 19 M.T. was sold at an average price of Rs. 176/- per kg. Thus based on the trend in auction sales during August 78

State	July 1978		July 1977		August 77 – July 78		August 76 – July 77	
	Qty. (M.T)	Av. Price (Rs./kg.)	Qty. (M.T)	Av. Price (Rs./kg)	Qty. (M.T)	Av. Price (Rs./kg.)	Qty. (M.T)	Av. Price (Rs./kg.)
Kerala	—	—	—	—	2300	142.55	801	164.20
Tamilnadu	4	138.34	3	101.28	156	116.61	113	143.09
Karnataka	@	135.41	17	108.66	541*	104.93*	378	145 04
Total	4	138,32	20	107.44	2997*	134 41*	1292	156.75

* Since revised on receipt of late reports

Centre	1978 Crop Qty. (Kgs)	August 78 Av. Price (Rs./kg.)	1977 Crop Qty. (Kgs)	August 77 Av. Price (Rs./kg.)	1976 Crop Qty. (Kgs)	August 76 Av. Price (Rs./kg.)	1975 Crop Qty. (Kgs)	August 75 Price (Rs./kg.)
KERALA								
Vandanmettu	6476	164.26	40623	137.14	—	—	—	—
Santhampara	31411	161.43	10736	125 16	3551	131.41	3220	73.64
Udumbanchola	4387	158.38	3188	134.06	—	—	2640	74.10
Kallar	12323	163.28	14753	124.20	2796	132.23	3437	69.49
Total (Others)	48121	161.63	28677	125.66	6347	131 77	9297	72.24
Total (Kerala)	54597	161.94	69300	132.39	6347	131.77	9297	72.24
TAMILNADU								
Pattiveeranpatty	4744	144.78	5159	114.85	2816	125 63	4759	71.18
KARNATAKA								
Saklaspur	1870	151.80	13497	109.22	757	152.33	5602	81.95
Mercara	854	145.00	12487	88 54	697	143.66	8218	60.09
Mangalore	76	138.37	39	86.00	56	140.32	527	60.79
Sirsi	167	136.87	—	—	—	—	—	—
Total (Karnataka)	2967	148.66	26023	99.26	1510	147.88	14347	68.65
GRAND TOTAL	62308	160.00	100482	122.91	10673	132.43	28403	70.25

alone it will not be realistic to conclude that the total crop of current season (1978) will be less than that of last season (1977). Only after observing the trend in arrivals at auctions in September and October 78 the position could be made more clear.

As regards Tamilnadu, the sales during August 78 was equal to that of last year. In Karnataka the sales at auctions will not provide a realistic indication of total crop position on account of the fact that the acution system in Karnataka is not as refined as in Kerala/ Tamilnadu region.

EXPORTS

The Customs report available at present shows that shipping bills have been passed for export of 86 M T. of Cardamom valued at Rs. 167.69 lakhs during July 1978 as against 76 M..T worth Rs 127.80 lakhs during July 1977. We have already received the details of 53 M T. valued at Rs. 98 92 lakhs for July 1978. Exporters have been reminded to furnish the details of the eremaining quantity. The average export price realised during July 1978 was Rs 196 per kg as against Rs 169 per kg , during July 1977.

Month-wise export performance during the current off-season compared to that for the previous year is given below:

Months	1978—79 Qty. (Kgs)	Value (Rs)	Unit Value (Rs/kg)	1977 78 Qty. (Kgs)	Value (Rs)	Unit Value (Rs/kg)
April	211554	35934789	169.86	104273	20667368	198.20
May	175059	29379245	167.82	199617	37229211	186.50
June	91678	16422907	179.14	159114	28157433	176.96
July	85789*	16769108*	195.97*	75672	12780100	168.89
Total	564080	98506049	174.63	538676	98834112	183.48

Note: * Customs Reports

Source: Monthly returns received from the Exporters of Cardamom.

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EXPORTS OF CARDAMOM

Period	1978 - 79 (Estimated Export)			1977—78 (Actual Export)		
	Qty. (MT)	Value (Rs.Crs)	Unit Value (Rs/Kg)	Qty. (MT)	Value (Rs.Crs)	Unit Value (Rs/Kg)
April–August (Off-season)	600	10.50	175	628	11.46	182
September-March (Crop Season)	2200	39.50	180	2135	36.97	174
Total	2800	50.00	180	2763	48.43	175

It could be seen from the above statement that the actual export during the period April-July 1978 totalled to 564 M.T. valued at Rs.9.85 crores as against 539 M.T. valued at Rs 9.88 crores, during the same period of the previous year registering an increase of 5% in terms of quantity. We expect not less than 50 M.T. valued at Rs. one crore during August 1978. The total export during the off-season April-August 1978 is, therefore, estimated to be more than 600 M.T. valued at Rs 10.50 crores. This almost compares with the performance of 628 M.T. valued at Rs.11.46 crores during 1977–78. Thus in the light of fairly comparable trend in export performance during the off-season period of 1977–78 and 1978-79 and also in view of a similar production during 1978-79, we expect that the performance of 1977–78 will be repeated during 1978-79 also for the ensuing period. With regard to the annual average export price we expect an increase of about Rs 5/-per kg. over 1977-78, ie, Rs. 180/-per kg.

Out of the estimated production of 4000 M.T. during 1978-79 the total export estimated for the financial year 1978-79 is 2800 M.T. with an earning of around Rs.50 crores. The break-up figures of this estimate for the off-season and the crop season is as given atop.

In the light of present indications we hope to achieve the above targets though there may be slight variations either way. □

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Field Estimate of Crop

We are bringing out to the readers the results of an attempt to assess the cardamom crop of 1977 (Last season) and the crop of 1978 (Current season) in Kerala arrived at on the basis of the area under cardamom as well as the average yield per acre reported by the field officers of the Board.

Under column No. 3 of the statement given below we hava given the total area under cardamom reported by the concerned Field Officers of the Board. The entire area will not be yielding as there will be immature plants and also on account of considerable gaps inbetween the plants in certain areas. Considering these facts the percentage of yielding area in total area has been estimated in each area under column No. 4. While 70% of the total area (on the average) was yielding in the State during last season, this precentage has gone up to nearly 75% during the current season. Column No. 5 gives the actual yielding area worked out on the above basis. Column No. 6 indicates only the average yield per acre in each area while there will be estates having much higher yield rates as well as lower yield rates in the same area. Column No. 7 gives the total crop of 1977 arrived at in each area on the basis of the yielding area and the average yield per acre. Under column No. 8 we have indicated the increase (I) or decrease (D) in the average yield per acre during the current season com pared to last season. The change in total area and yielding area during the current season is indicated in Column Nos 9,10 and 11. Under column No. 12 we have indicated the average yield per acre during the current season worked out on the basis of the percentage increase or decrease in the average yield per acre over the last season. Considering this average yield per acre and the yielding area in the current season the production in different areas for the current season is worked out and shown under column No. 13 The actual increase (+) or decrease (-) in production during the current season compared to the last season is indicated in column No. 14.

The final estimate of 1977 crop in Kerala arrived at on the basis of auction sales and direct sales was 2900 M. T. It is seen that the same estimate (2895 M. T.) has been arrived at by this method also. However, for the current season a total crop of 3100 M. T. is arrived at in this attempt. As mentioned earlier this estimate is based on the average yield rates assessed in each area. As such how far it will compare with the real position is yet to be tested.

We hope our enlightened readers will co-operate with us by giving their vaulable suggestions/comments in this regard, which will help us to redefine the position.

erala for 1977 and 1978

S. No.	Village/Taluk/ District	CROP OF 1977 (LAST SEASON) Total Area in 1977 (Acres)	Per-centage of yielding area in total area in 1977	Yielding Area in 1977 (Acres)	Yield per Acre during Last Season 1977 (Kgs.)	Crop of 1977 (M.T.)	% Increase or Decrease in yield per acre in Current season 1978	CROP OF 1978 (CURRENT SEASON) Total Area in 1978 (Acres)	Per-centage of yielding Area in total area in 1978	Yielding Area in 1978 (Acres)	Yield per Acre for current season 1978 (Kgs)	Pro-duction in current season 1978 (M.T.)	Increase (+) or Decrease (—) in production in current season over last season
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	AREA No: I												
1.	Ayyappancoil Village	7434	86	6384	68	434	18% D	7434	86	6412	57	365	—69
2.	Chakupallam ,,	6500	77	5000	65	325	6% D	6800	75	5100	61	311	—14
3.	Vandanmettu ,,	5930	80	4750	77	366	10% D	6130	86	5272	70	369	+ 3
4.	Peermade Taluk	5400	75	4040	62	250	12% D	6576	75	4932	39	192	—58
5.	Rajakad Village	7950	75	5962	35	208	11% I	7950	94	7456	39	291	+83
6.	Pampadumpara Village	7207	80	5766	36	208	16% I	7207	81	5832	42	245	+37
7.	Chittoor Taluk (Nelliampathy)	7185	75	5400	39	211	Same	7185	75	5400	39	211	—
	TOTAL:	47606	78	37302	53	2002	8%D	49282	82	40404	49	1984	—18
	AREA No: II												
1.	Udumbanchola Village	7437	74	5504	33	182	30% I	7437	67	5504	43	237	+55
2.	Devicolam Taluk	7500	67	5000	25	125	Same	7500	67	5000	25	125	—
3.	South Wynad & Ernad Taluks	8366	50	4184	27	113	10% I	8366	75	6275	30	188	+75
4.	Parathodu Village	5121	80	4112	25	103	10% I	5121	80	4112	31	127	+24
5.	Chathurangapara ,,	4112	67	2760	18	50	15% I	4112	67	2760	21	58	+ 8
6.	Santhampara ,,	10434	69	7150	13	93	30% I	10434	69	7150	17	122	+29
7.	Chinnakanal ,,	4276	56	2400	30	72	20% I	4276	56	2400	36	86	+14
8.	North Wynad Taluk	2997	60	1499	27	40	10% I	2997	60	1499	30	45	+ 5
	TOTAL:	50243	65	32609	24	778	17% I	50243	69	34700	28	988	+210
	AREA No: III												
1.	Thodupuzha Taluk	4808	49	2350	24	57	Same	4808	50	2400	24	58	+ 1
2.	Konnathady Village	180	100	180	35	6	Same	180	100	180	35	6	—
3.	Kalkoonthal ,,	3000	69	2070	17	35	20% I	3000	71	2120	20	42	+ 7
4.	Mannarghat Taluk (Attapady)	1692	72	1218	11	14	20% I	1692	72	1218	17	21	+ 7
5.	Quilon District (Aryankavu)	29	100	29	18	1	Same	29	100	29	18	1	—
6.	Trivandrum District (Nedumangad)	264	61	160	15	2	10% I	264	61	160	17	3	+ 1
	TOTAL:	9973	60	6007	19	115	5% I	9973	61	6107	21	131	+16
	GRAND TOTAL:	107822	70	75918	38	2895	Same	109498	74	81211	38	3103	+208

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6.	**COCHIN :**	Karuna, M. G. Road, Opp Kavitha Theatre.	,,	35277
7.	**CHANDIGARH :**	S. C. O. 85, Sector 17-C.	,,	25753
8.	**BHUBANESWAR :**	No. 17, Janpath, Babujee Nagar	,,	50944
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NEWS AND NOTES

UPASI ANNUAL CONFERENCE

'Increased efficiency and Productivity in Agriculture'

—B. P. Singh

The plantation industry in the country has achieved a high level of productivity due to adoption of modern agricultural practices. A highly populated country like India could generate necessary resources for industrialisation only by increasing the efficiency and productivity in Agriculture. Shri Bhanu Pratap Singh, Union Minister of State for Agriculture and Irrigation made these observations while inaugurating the 85th Annual Conference of the United planters' Association of Southern India at Coonoor on the 11th September 1978.

Commenting on the utilisation of water resources for Agriculture, the Minister said that out of the 140 million hectares of cultivable land available in the country, if irrigation could be provided for at least 100 million hectares to facilitate raising of two to three crops in a year,we could create a large surplus. But this could not be easily achieved though we have the best soil and climate besides necessary skill and talents as the agricultural sector was not given a fair deal in the past.

Shri Singh evinced keen interest in the marketing scheme evolved by the UPASI for its primary commodities and offered necessary help from the Government to improve it.

Earlier, delivering the presidential address, Shri C. Prabhakaran, president of UPASI called for a meaningful dialogue between the State and Central Governments and the industry for the formulation of pragmatic policies for the development of the plantation industries. Referring to the problems faced by the plantation industries, Shri Prabhakaran stressed the necessity for a long term policy for the development of the plantation sector.

The UPASI President thanked the Government for reducing the export duty from Rs. 5/-to Rs. 2/-per kilogram of Tea. He suggested total scrapping of this duty and recommended introduction of an export quota if the Government wanted to see that Tea was made available to the internal market at a fair price. He warned that if the cess is continued indefinitely, the planters will not be encouraged to increase their production, resulting in shortages and consequent high prices in the long run.

Shri Prabhakaran referred to the steep fall in the prices of coffee in the international market and said coffee seemed to have a declining prospect over the next 12 months, which was contrary to the trend of most of the primary commodities established in the world market.

Shri Bhanu Pratap Singh, Minister of State for Agriculture and Irrigation (Left), examing the cardamom capsules shown by Shri K. R. Kurup, Publicity Officer, Cardamom Board (Right), Seen in the midst is Shri C. Prabhakaran, President of UPASI.

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Regarding rubber prices, the UPASI President said that his organisation had adopted a consistent policy towards rubber prices seeking to stabilise them within a range that was reasonable both to the growers and to the manufacturers, but the response from the manufacturers has been quite disappointing. His complaint was that the manufacturers did not respond when the price of rubber was low for the last two years. The small growers were also not so keen to hold down prices since they had suffered for a long time from the manufacturers. He expressed the view that any arbitrary fixation of prices would only lead to unhealthy practices and manipulations.

'Price incentive is the best incentive to increase production'

—S. G. Sundaram

Everybody reacts to price. Remunerative price is the best incentive which can be offered to its producers for the development of any industry. This has been the secret of success of cardamom industry in the recent past. The price of cardamom has been doubled in the recent past from its old static stage of Rs. 90/-per kg This has also resulted in an increase in the price of the plantations from a meagre Rs. 10,000/-to more than Rs. 75,000/-for an acre An attractive price for the produce has changed the attitude of the planters towards management and cultural practices to be adopted in their plantations. Absentee landlordism, which was the rule of the cardamom plantation industry is also in the process of change. All these changes in the attitude of planters tend to increase the investment in the industry for its development. If the present price for the commodity is maintained without substantial fluctuations, it is definite that our production and export will be doubled in the next few years.

Shri S. G. Sundaram, chairman, Cardamom Board disclosed the secret of success of cardamom industry while speaking at the 85th Annual Conference of UPASI at Glenview, Coonoor on the 12th September, 1978. He was addressing the delegates of the UPASI along with the Chairmen of Coffee and Tea Boards in the exclusive session on "Long Term Planning and Plantation Crops".

Seen in the picture from right to left are, S/Shri. S.G. Sundaram, chairman, Cardamom Board; N. Bharathan Pillai, Market Development Officer, Cardamom Board; K. R. Kurup, Publicity Officer, Cardamom Board and C.P. Saleem, Editor, Cardamom Board at Cardamom Board's Pavilion at UPASI Exhibition

Shri Sundaram suggested that intensive research on all aspects of the cardamom industry should be undertaken without any loss of time. Starting of a Station for research on cardamom under the control of the Board was cited as a major step towards this direction. Soil moisture preservation and soil conservation practices in existing plantations were pointed out as other importantareas requiring immediate attention. Due emphasis will have to be given to these aspects for building up the productivity of existing plantations. We have a very good landscape and fertile soil in the Western Ghats. But due to negligence of the planters over a period of time, the fertility of the soil is being deteriorated progressively. We have to look into the various aspects of building up the organic matter reserves of the soil. Cutting of forest trees, direction of wind etc. also deserve detailed investigation for conserving the soil and its moisture in the hilly regions for building up its fertility.

Shri Sundaram was also of the view that the methods of processing cardamom should be improved. He suggested that the scientists connected with the various plantation industries could contribute a lot in this area. They should sittogether, exchange their views and experiences so that new ideas and innovations may come up for the better processing and preservation of the produce.

The cardamom trade in the country was cited as a peculiar one in one respect. It is the only one commodity where the traders get the minimum margin. The export price of cardamom does not usually exceed 5% over the producers' price and so the industry is in a position to plough back to the planters the maximum advantage of an increase in the international price.

Shri Sundaram said that the Arabs consider consumption of cardamom as a status symbol. They like 'Gahwa' – a decoction of coffee and cardamom. The green cardamom fetches a premium price in the Middle East as it is preferred to other varieties by the Arabs. The average per capita consumption of cardamom in Saudi Arabia is 250 gms. as against a negligible 2 gms. in its own producing country, India. Guatemala has entered the market very recently as a competitor to Indian Cardamom which was ruling the International market for many years in the past. But it is not going to be a threat to Indian Cardamom in view of the increasing international demand for this versatile spice.

Board participates in UPASI Exhibition

In connection with the 85th Annual Conference, the United Planters' Association of Southern India organised an exhibition in Coonoor for three days associating various input manufacturers and suppliers for the plantation industry and Commodity Boards Various new innovations of manufacturers which would help increase productivity and efficiency of the plantation industry were exhibited and explained to the planters attending the Conference. The main object of the exhibition was to bring together the input suppliers and the consumers enabling them to have direct dialogues on the problems of common interest to both the sections. The exhibition was inaugurated by Shri C. Prabhakaran President, at a simple function in the morning of 11th September 1978.

Cardamom Board had put up a pavilion at the exhibition to explain to the visitors the unprecedented achievements the industry has made in the recent past. The attractive prices of cardamom prevailing in the world market was the point which caught the attention of most of the visitors to the Board's stall. The Board's exhibits attracted a good number of the delegates attending the Conference. Shri Bhanu Pratap Singh, Union Minister of State for Agriculture and Irrigation visited our stall and appreciated the services rendered by the Board for the rapid development of this foreign exchange earning commodity. He recorded in our diary: "I am glad that we are producing such quality cardamom".

Indian National Exhibition in Moscow

The largest-ever Indian Exhibition abroad was held in Moscow from Ist to 30th August 1978. The exhibition was inaugurated by the Soviet Deputy Prime Minister Mr. Ivan Arkhipov, by lighting a dia in traditional Indian way on Ist August.

Mr. Mohan Dharia, Union Minister for Commerce, Civil Supplies and Co-operation led the Indian delegation at the time of the inauguration of the Exhibition and welcomed the guests.

The Cardamom Board had also participated in this exhibition Our exhibits included photographs and charts showing the different facets of the plantation industry, processing, grading and export, model of cardamom plant, samples of important grades of cardamom, publications of the Board on production, processing, marketing and export of Indian Cardamom, list of cardamom exporters in India etc. Shri S. G. Sundaram, Chairman, Cardamom Board represented the Board in the inaugural function.

The main theme of the exhibition was 'India-Eternal and Ever New'. The exhibition had three main areas, namely, the display area for sophisticated engineering exhibits and non-engineering commodities; the mezzanine floor consisting of traditional products and introductory display.

The exhibits of nearly 370 participants from India including private and public sector organisations and quasi Governmental Institutions were put up in the 108 stalls in accordance with the designs prepared earlier.

In the Introductory Area, a panorama of Indian cultural hertage and achievements in the fields of trade, industry, science and technology was presented. A major attraction in the display area was the 11 metres high Tree of Life built with metal structural system, covered with translides depicting people of India and their life in the urban and rural areas.

In the Mezzanine area was displayed a full view of Indian textiles, handicrafts and leather goods. The range of textile exhibits covered woollen, silk, man-made fibres, handloom and ready-to wear articles. Also on view were sophisticated furniture items.

Engineering products, which include steel items, heavy machinery and machine tool items, products of the heavy engineering industry, models of heavy electrical machinery and equipment, light engineering goods and consumer durables, industrial machinery and a large range of electronic items were also exhibited here Some machinery from the Heavy Engineering Corporation and the Bharat Earth Movers Limited were exhibited outside the main hall.

The range of chemicals and pharmaceuticals, plastics, jute, coir and linoleum products, sports goods, processed foods, cashew nut, coffee, cardamom and tea that India has to offer to the world were at display in the main hall.

At the exhibition, the number of visitors crossed the 1 5 million -mark by the time the exhibition came to an end on August 30,1978. The peak daily figure of nearly 150,000 was reached on Sunday the August 27, which was regarded as record for any national exhibition held in the U. S. S. R. or any other country. Almost all the top dignitaries of the U.S.S R Government, members of politbureau and leaders of the Communist Party present in Moscow visited the exhibition.

Several exhibitors from the public as well as private sector finalised their contracts with the buying agencies of the U. S S. R. and some of the East European Countries. Full impact of the order booking is however expected to be felt in the next year's trade plan. As a result of the diversity of exhibits displayed and many new products introduced the exhibition was expected to add a new dimension in the Indo-USSR trade in the coming years. The items of interest were machine tools, boiler equipment, guillotine shears, storage batteries, spectacle frames, electrolyser pot, cash register, dyes and detergents, wire ropes, handicrafts, cables, beads of bone and ivory. Active talks were held between an Indian party and a U. S. S. R. organisation for setting up a plant in the U. S. S. R. for the manufacture of cosmettcs.

A wide range of eletronic goods and accessories, cash register, telephone cables, models of reactors and satellites for space research and irradiated seeds and grains showing the application of nuclear research for peaceful purposes made a great impact. Sports goods proved of equal interest in view of the forthcoming olympics in Moscow in August 1980

Wide range of textiles, carpets, woollen knitwear, leather garments and ivory handicrafts were of particular interest to the ladies who were found to crowd the stalls displaying these objects.

Transit Visa For Abu Dhabi

The Embassy of India, Abu Dhabi has informed that the Government of United Arab Emirates which had earlier abolished the system of the issue of transit visa, have now re-introduced it but limiting it only to

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foreign businessmen visiting the State again for 7 days, as before. Further the transit visa will be granted only if the visitor has a sponsor reading legally in UAE and working in the licensed trade or company or corporation licensed to operate in the country according to rules. Morever, the sponsor or his representative will have to sign a guarantee bond and specify a known address of the visitor through which the authorities can contract him. The sponsor will also be required to be present physically to receive the visitor at the Airport.

Bulletin on Market Intelligence

The Trade Development Authority, New Delhi have brought out country Bulletins on Iran, Indonesia and Kuwait under their International Marketing Intelligence with a view to disseminating information on potential export markets. These Bulletins include information on the economy, foreign trade, investment opportunities, foreign trade regulations shipping information, marketing and distribution etc. Copies of the Bulletins are available with the Trade Development Authority. Bank of Baroda Building, 16 Parliament Street, New Delhi - 110 001 on payment of Rs. 30/- (inclusive of postage) by crossed Indian Postal Order/Demand Draft drawn in favour of the Secretary, TDA.

Drying Processes of Cocoa Beans Standardised

In its efforts to assist the development of cocoa industry in India, the Central Food Technological Research Institute (CFTRI), Mysore, has standardised processes for small scale fermentations and drying of cocoa beans, which are required for manufacture of cocoa products.

The cocoa planters can beneficially use these processes for supplying dried beans of good quality to the manufacturers of cocoa powder and chocolate.

In recent years cocoa cultivation has been rapidly increasing, especially in Kerala. Although the present annual production of dry beans is only about 100 tonnes, it is expected to reach 1000 tonnes within a few years, which can meet the country's requirements.

At present, the manufacturers of cocoa products collect the wet beans and dry them for being used in their products. Most of the planters do not have adequate knowledge of fermenting and drying the beans properly.

The CFTRI now offers the know-how for fermentation and drying of cocoa beans to cocoa planters by demonstrating the processes at cocoa plantations. The equipment required are wooden trays and artificial dryer, which are available easily.

Commerce Secretary visits Cochin

Shri C. R. Krishnaswamy Rao Sahib, Secretary to Government of India, Ministry of Commerce visited Cochin on 20th/21st September 1978. He convened meetings of the Chairmen and Senior Officers of the various Commodity Boards, Export Promotion Councils and planters, traders and exporters of different commodities at the MPEDA Conference Hall on 20th September to discuss the problems and prospects of export oriented commodities of Kerala. This was the first visit to Cochin and Kerala by Rao Sahib after taking over as Secretary, Ministry of Commerce.

Joint Secretary meets Planters and Exporters

Shri T. Balakrishnan who has taken over charge as Joint Secretary, Ministry of Commerce in change of plantation crops recently, visited Cardamom Board and cardamom plantations in Idukki District. He also met planters, auctioneers, exporters, dealers etc. at a meeting in Thekkady on 21st September 1978 and discussed the various problems of the cardamom plantation industry.

SINGAPORE MARKET

Variety	Prices During July'78		Prices During August'78	
	S$ per picul	Rs./Kg.	S$ per picul	Rs./Kg.
Green — Sri Lanka	3000.00	178.08	2800.00	166.21
Small — Sri Lanka	2800.00	166.21	2800.00	166.21
Green — India	2800.00	166.21	—	—
Small — India	2800.00	166.21	—	—
White "AB", India	2700.00	160.27	2700.00	160.27

Source: High Commission of India, Singapore.
Note: 1 S$ = Rs. 3.59, 1 Picul = 60 479 Kg.

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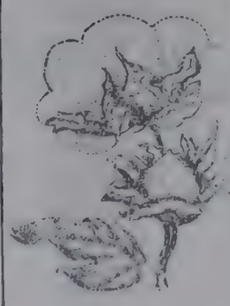
- Quicker assimilation of the microfine powder discourages weed growth
- Drastic reduction in use of other chemical fertilisers
- Ideal for plants attacked by mildew—particularly grapes & tea
- Easily sprayed by hand sprayer, power sprayer or powder dusters
- Effective on all crops – including vegetables, plantations and rose gardens

• Lowers cost of cultivation
• Increases yield

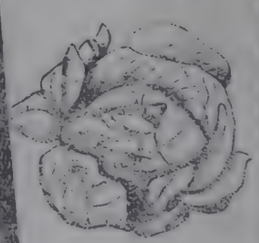
Tobacco

Chillies

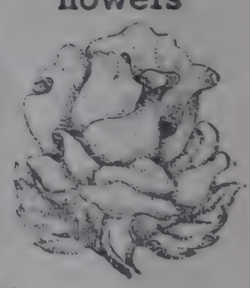
Cotton



Cabbage



Ornamental flowers



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Cultivation Operations

NOVEMBER

	South West Monsoon areas (Kerala-Tamilnadu)	North East Monsoon areas (Tamilnadu)	South West Monsoon areas (Karnataka)
Primary Nursery	Clearing the site for the primary nursery-two rounds of digging and removal of weeds stubbles, stones etc.	Formation of beds and spreading jungle soil over them-watering to allow weed seeds to germinate. Uprooting of seedlings from previous season's primary nursery for transplanting to secondary beds.	Completing pandal construction and covering with leafy twins or coconut fronds-Routine watering and prophylactic plant protection measures.
Secondary Nursery	Plant protection measures-watering as required- second round weeding.	Uprooting of left over secondary seedlings for gap filling in field- transplanting of primary seedlings for newly farmed secondary beds- mulching with dry leaves and watering.	Routine watering plant prostection and weeding.
Starting of New Plantations	No work,	Gap filling.	Routine maintenance.
Maintenance of Plantations	Thrip round harvest- Thrips control- Forming basins around one year old plants continued	Third round harvest-Thrips control-second round weeding continued.	Crop harvest, curing storage-watch and ward.

DECEMBER

Primary Nursery	Third round digging-formation of beds-collection and preparation of seed from selected plants-Sowing seeds in rows in the beds and spreading a thin layer of soil above-mulching with potha grass, straw or other suitable material-watering daily.	Weeding the freshly formed beds-Collection of pandal materials-Uprooting of seedlings for transplanting to secondary beds continued.	Routine watering and prophylactic plant protection measures-weeding.
Secondary Nursery	Routine watering and plant protection-second round relayering of beds and earthing up after North East Monsoon rains	Uprooting of left over secondary seedlings for gap filling in field continued. Transplanting of primary seedlings to newly formed secondary beds and mulching continued-watering.	Routine watering, plant protection and weeding.
Starting of New Plantations	No work.	Gap filling continued - 2nd round weeding. Weeding and mulching of last year's new planted areas.	Routine maintenance.
Maintenance of Plantations	Fourth round harvest-thrips control-third round weeding started.	Fourth round harvest-Thrips control.	Crop harvest, curing, storage or transport to market-watch and ward.

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Cythion can be applied 1-3 days before harvesting, without leaving any harmful residue.
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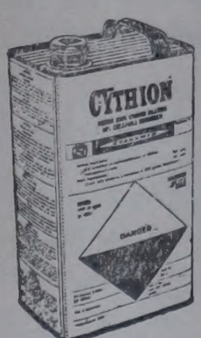

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